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ABSTRACT

Demographic and social changes, increasing economic interdependence, and educational reform movements are causing major changes in vocational education. Essential work force skills and the standards to account for their achievement are being debated. The 1980s' "Excellence Movement" focused on strengthening academic requirements, developing public-private partnerships, and setting higher expectations for students, while increasing access for women, minorities, and people with disabilities. Shortcomings were the conflict between raised standards and increased access, lack of attention to noncollege-bound students, and failure to address adult retraining needs. State initiatives and America 2000 are responses to these challenges. America 2000 and several work force preparation proposals ("Investing in People," "America's Choice," and "What Work Requires of Schools") agree on such basic issues as international economic competitiveness, collaboration, and the need for standards and measures. A consensus-building effort that synthesizes the best from each proposal, more consistent use of the terminology of performance measures/standards, and more attention to existing experience in this area are recommended. Another "excellence movement" being widely implemented is total quality management (TQM). The four work force preparation strategies do not reflect the TQM vision and direction. A unified national policy should consider the following: retraining and upgrading the skills of the workers already in the work force, small businesses, and convincing business/industry that making larger investments in education/training will improve their profits. (Contains 112 references.) (SK)

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Clearinghouse on Adult, Career,
& Vocational Education

Selected Contemporary Work Force Reports: A Synthesis and Critique

by

James M. Weber

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TABLE OF CONTENTS

LIST OF TABLES, FIGURES, AND EXHIBITS v

FOREWORD vii

EXECUTIVE SUMMARY ix

INTRODUCTION 1

Background 1
Purpose 2

THE CALL FOR EXCELLENCE 5

Reform Reports and Related Perspectives 5
Concerns with Improving Vocational Education 6

THE PURSUIT OF QUALITY 11

State-Level Initiatives on Work Force Preparation and Education 11
Establishing the "Field of Play"–The President's and Governors' Goals for Education 12
A Counterview–The Sandia Labs Study 18

IMPROVING THE QUALITY OF WORK FORCE PREPARATION 23

Overviews of the Three National Work Force Preparation Reports 24
A Crosswalk among the Three National Work Force Preparation Proposals 25

PERFORMANCE MEASURES/STANDARDS AND THE ASSESSMENT OF ESSENTIAL WORKPLACE SKILLS 35

The Call for Performance Measures and Standards 36
The Measures/Standards Raised in America 2000 37
The Measures/Standards Noted in the Three National Work Force Preparation Reports 37

TQM AND ITS REFLECTION IN AMERICA 2000 AND THE THREE WORK FORCE PREPARATION STRATEGIES 45

The Perceived Use of TQM in Developing the Work Force Preparation Recommendations 51

REFERENCES 55

LIST OF TABLES, FIGURES, AND EXHIBITS

Table

1. CURRENT AND EMERGING PARADIGMS OF VOCATIONAL EDUCATION 8
2. A SAMPLING OF CRITICAL STUDENT/WORKER OUTCOMES IDENTIFIED IN STATE REPORTS 13
3. "CROSSWALK" SUMMARY–THREE WORK FORCE PREPARATION STRATEGIES 30
4. MEASURES/STANDARDS CALLED FOR IN AMERICA 2000 39
5. MEASURES/STANDARDS CALLED FOR IN THE THREE NATIONAL WORK FORCE PREPARATION REPORTS 40
6. BOEING'S THREE APPROACHES TO PRODUCTIVITY 46

Figure

1. Four general determinants of excellence in vocational education 1910-2000 2
2. Overview of major topics covered in this paper 4
3. Key sources of the work force in the year 2000 21
4. Role of performance standards in program improvement 38
5. Major customers identified by an institution of higher education 48

Exhibit

1. EXAMPLES OF POTENTIAL CONFLICTS AMONG PROPOSED CHANGES IN EDUCATIONAL PROCEDURES 20
2. WORKPLACE KNOW-HOW 26
3. CHARACTERISTICS OF TODAY'S AND TOMORROW'S WORKPLACE 27
4. CHARACTERISTICS OF TODAY'S AND TOMORROW'S SCHOOLS 33
5. OREGON STATE UNIVERSITY'S 12 CRITICAL PROCESSES 46
6. A COMPARISON OF TQM-ORIENTED AND TRADITIONAL MANAGEMENT STYLES 51

FOREWORD

The Educational Resources Information Center Clearinghouse on Adult, Career, and Vocational Education (ERIC/ACVE) is 1 of 16 clearinghouses in a national information system that is funded by the Office of Educational Research and Improvement, U.S. Department of Education. This publication was developed to fulfill one of the functions of the clearinghouse–interpreting the literature in the ERIC database.

ERIC/ACVE would like to thank James M. Weber for his work in preparing this paper. Dr. Weber is Coordinator of Institutional Assessment and Associate Professor of Psychology, Boise State University. He is currently implementing Boise State's Outcomes Assessment Program and teaching classes in measurement, testing, and statistics. In his previous position as Senior Research Specialist, Center on Education and Training for Employment (CETE), he directed a 2-year national survey of the dynamics of nearly 900 vocational and nonvocational classes. He also spent 2 years as Assistant Supervising Institutional Coordinator of the VOTRAKON project sponsored by the U.S. Department of Labor in Saudi Arabia.

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Ray D. Ryan
Executive Director
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for Employment

EXECUTIVE SUMMARY

Broad demographic and social changes, increasing economic interdependence, and educational reform movements are causing major organizational and operational changes in the nation's vocational-technical delivery system. The essential skills needed by the work force and the standards and measures to account for their achievement are being debated in political and educational arenas. The early 1980s saw a number of investigative and prescriptive reports on education. This "Excellence Movement" focused on strengthening academic requirements, developing public-private partnerships, and setting higher expectations for students, while increasing access for women, minorities, and people with disabilities. Shortcomings of this movement were the inherent conflict between raised standards and increased access, the lack of attention to the majority of the student population who are not college bound, and failure to address the forces of change and the retraining needs of adults.

During the mid-1980s, states responded to these challenges with a number of initiatives for improving their education and training institutions. At the beginning of the 1990s, an "education summit" of governors and the President resulted in America 2000 and six proposed National Education Goals, with a four-part strategy for achieving them. Questions and concerns have been raised by a number of experts about the validity of the assumptions in the strategy and the issues surrounding the goals.

However, America 2000 and several parallel proposals on work force preparation have attracted a great deal of attention. These proposals include–

- *Investing in People: A Strategy to Address America's Workforce Crisis* (Commission on Workforce Quality and Labor Market Efficiency 1989)
- *America's Choice: High Skills or Low Wages!* (Commission on the Skills of the American Workforce 1990)
- *What Work Requires of Schools* (Secretary's Commission on Achieving Necessary Skills 1991)

Although the recommendations of these proposals differ in their general nature and focus, they are in agreement on several basic issues, including the need to focus on international economic competitiveness, the active collaboration of all levels, and the need for standards and related assessment mechanisms to evaluate student/worker progress. A consensus building effort that synthesizes the best from each proposal and focuses upon marshalling the necessary support and fiscal resources for implementation is recommended.

The need for performance standards and measures is being stressed by all four proposals as well as the Carl D. Perkins Vocational and Applied Technology Education Act of 1990.

However, the work force preparation proposals tend to cover areas of general education or basic skills rather than specific workplace skills, the terminology and approaches employed vary significantly, and they generally do not take into account current work on industry-based measures/standards as well as assessment of the technical skills of beginning workers required by the Perkins Act. More consistent and focused use of the terminology of performance measures/standards and more attention to the substantial existing base of experience in this area are recommended.

Another "excellence movement" being widely implemented in business/industry and some areas of education is Total Quality Management (TQM). This quality improvement process is customer driven, seeks continuous improvement, tries to make processes work better, recognizes the critical need for information, strives to eliminate rework, emphasizes teamwork and empowerment of people, and requires training, recognition, vision, and leadership. The four work force preparation strategies do not reflect strongly the kind of vision and direction called for under TQM. In order to develop a unified national policy statement on education/training and work force preparation, several key points should be considered:

- Do the proposed strategies focus on processes that emphasize retraining and upgrading the skills of the workers already in the work force, projected to be 85 percent of the workers in the year 2000?

- Do the proposed strategies account for the fact that the key employers in this country are small businesses?

- How will these proposals convince business/industry that making larger investments in education/training will continue, if not improve, their profits?

- How will these proposals convince the nation of the need to adopt their recommendations?

Information on work force preparation and performance measures/standards may be found in the ERIC database using the following descriptors: Accountability, Basic Skills, *Educational Change, Educational Objectives, Educational Quality, *Evaluation Criteria, *Job Skills, Labor Force, *Labor Force Development, Performance Factors, Postsecondary Education, School Restructuring, Secondary Education, *Standards, Vocational Education; and the following identifiers: *America 2000, National Education Goals, *Total Quality Management. Asterisks indicate terms that are particularly relevant.

INTRODUCTION

Background

The United States' system of vocational-technical education and training has evolved (albeit, slowly) since the early part of the century to meet changing societal needs, pressures, and priorities. (See figure 1.) It was initiated under conditions not too unlike those existing today–a major structural shift in the nation's economy and a growing threat of international competition (Rosenfeld 1987). For over half a century, vocational-technical education has been geared toward addressing the needs of an industrial society based primarily on manufacturing and production with its inherent emphasis on the Taylorism philosophy. Under that philosophy, the workplace was characterized by–

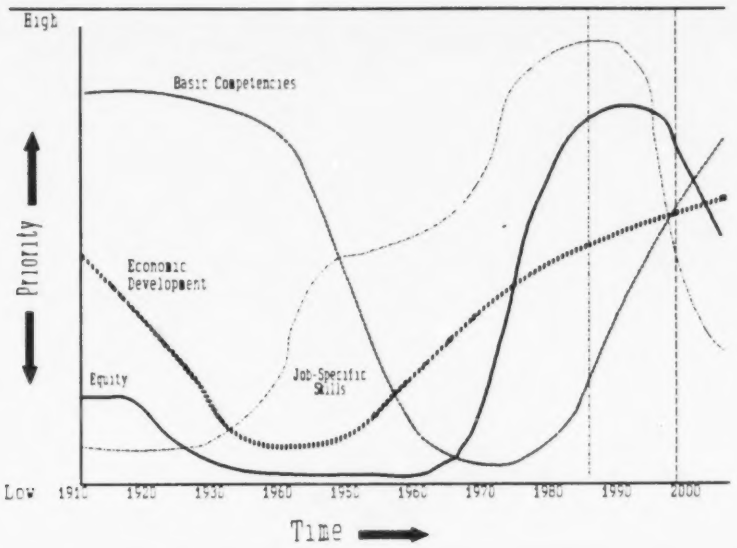
> dividing human and machine labor down into the smallest and easiest function; to create dumb, foolproof jobs for dumb human beings . . . characterized as essentially lazy, greedy, and demanding of discipline. (Mills 1978, p. 25)

As a result of this emphasis, in many jobs for which vocational education and training have been provided (and in some settings continue to be provided), "the parts are broken down so that the ultimate elements are as simple and inexpensive as possible, as with the unskilled worker in a narrow job who is cheap to replace and who takes little time to train" (Trist 1981, p. 58). Such a perspective of the workplace "results in workers being treated as unthinking and uncaring parts of the production process" (Pratzner 1987, p. 10).

Over the last several decades the nation's dramatic shift to an information-oriented and service-based economy, coupled with the shift in the basic philosophical-operational paradigm underlying the way business is being conducted–from Taylor to Deming–has resulted in significant changes in the skills that serve to define a productive worker (Carnevale 1991; Carnevale and Gainer 1989). The workplace paradigm, which is currently evolving, involves–

- enabling employees routinely to solve problems, help improve processes, and make decisions;
- fostering ongoing teamwork between managers, employees, unions, customers (both internal and external), and suppliers;
- designing quality into products/services the first time;
- using state-of-the-art technology; and
- making product/service improvement a habit, a never-ending journey. (Ore Ida 1992)

These fundamental shifts in the workplace and attendant worker skill requirements, coupled with major changes in the demographics of both the current and future work force, have heightened the need to



SOURCE: Rosenfeld (1987), p. V-60.

Figure 1. Four general determinants of excellence in vocational education 1910-2000

adapt the vocational-technical education and training system (perhaps as suggested by Rosenfeld in figure 1) in order to address adequately the needs of the work force, which is central to the nation's long-term success in the global economy. Within this context of broad demographic and social change, increasing economic interdependence and competition, and the call for far-reaching educational reform (if not revolution), vocational and career educators are faced with a growing demand to develop, update, and upgrade program-related curricula and procedures so they are more targeted toward development of the skills deemed necessary in a rapidly changing and evolving workplace (Bailey 1988; Bailey and Noyelle 1988; Carnevale 1991; Carnevale and Gainer 1989; Carnevale, Gainer, and Meltzer 1988; Noyelle 1984; Pratzner 1987).

A key part of the federal response to this broad need for reform and improvement in the nation's vocational-technical education system has been operationalized via the Carl D. Perkins Vocational and Applied Technology Education Act (Perkins Act). Under the final regulations promulgated in relation to that law, it is noted–

> The Act reflects many amendments that will assist States and local recipients in improving their vocational education programs. (U.S. Department of Education 1992, p. 36720)

Furthermore, the Perkins Act is seen at the federal level as being an integral part of a broad educational reform effort that will ensure that every adult possesses the knowledge and skills necessary to compete successfully in the global economy.

Purpose

The purpose of this paper is to trace the educational reform movement initiated over a decade ago to its current status as reflected in the Carl D. Perkins Vocational and Applied Technology Education Act. More specifically, it involves (1) the review and synthesis of a number of recent reports and allied publications that describe what the respective authors deem to be the skills needed in today's as well as the future workplace and (2) the relationship of those projected requirements to the need for performance measures/standards that serve as a vehicle for assessing the effectiveness of the associated vocational-technical education programs.

The first section of the paper briefly describes the major reform reports of the early 1980s with their attendant call for excellence and traces their potential implications with regard to vocational-technical education. Next, the myriad of state-level reform reports describing selected states' positions and directions regarding their work force preparation initiatives and associated education/training strategies are reviewed. Then the six goals proposed for education by President Bush and 50 state governors are considered and an initial summary of related "benchmark" data provided. The associated federal perspective on work force preparation and related education/training strategies, as reflected in three major federal reports, is reviewed. Given the array of changes and related outcomes called for via these sets of documents, the next issue considered deals with the assessment of those outcomes through establishment and implementation of performance measures and associated standards as called for under the 1990 Perkins Act. The final section deals with potential implications of the Total Quality Management (TQM) approach and its associated call for continued quality improvement with regard to the establishment of future performance measures/standards to assess and enhance the skills of the nation's work force. A visual overview of this general topical flow is provided in figure 2.

Figure 2. Overview of major topics covered in this paper

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THE CALL FOR EXCELLENCE

Reform Reports and Related Perspectives

In the 1970s and early 1980s a backdrop of growing international competition, which caused major changes in the nation's competitive posture and the business world, as well as a heightened concern with the competence of high school graduates and their ability to compete successfully in a rapidly changing workplace, led to the publication of a number of investigative and prescriptive reports on what was viewed as right and wrong with education in the United States, particularly secondary education [for example, *Action for Excellence: A Comprehensive Plan to Improve Our Nation's Schools* (Education Commission of the States 1983), *Educating Americans for the 21st Century* (National Science Foundation 1983), *A Nation at Risk* (National Commission on Excellence in Education 1983), and *The Unfinished Agenda* (National Commission on Secondary Vocational Education 1984)]. Although these reports covered a broad range of concerns from a variety of perspectives, they yielded a number of fairly common recommendations for change. Included among those recommendations were the following (Kadamus and Daggett 1986):

- Provide all high school students (those who are college bound, in general education, and in vocational education) with a "core curriculum" that includes basic skills in reading, writing, computing, communicating, and reasoning
- Strengthen curricular requirements (for example, require that students complete more credits), especially in English, mathematics, science, social studies, technology/computer science, and often foreign language, music, and art
- Develop new partnerships between the public and private sectors to provide sustained support for education
- Eliminate tracking of students to ensure access to high quality education for all
- Set higher expectations for students and implement procedures to measure and assess performance
- Establish clear goals and improve the leadership needed to attain them
- Improve teacher preparation, performance, respect, and rewards

This array of reports helped usher in a new educational reform movement, referred to by then Secretary of Education, William Bennett (1986) as the "Excellence Movement." Under that movement, many suggestions were offered, but in general, excellence was equated with higher standards within the general academic program–standards that included, among other things, a more "classical" curriculum; longer school days, school weeks, and school years; and higher student achievement test scores. However, these suggestions did not adequately identify, let alone delineate, the specific skills sought as learner outcomes of the reformed delivery

system. At the same time, many of the reform reports called for greater access to high quality education for minority students, for females, and for those classified as handicapped. Unfortunately, these reports were generally silent with regard to the inherent conflict between raising standards and increasing access (Smith and Hester 1985). They also failed to take into account the fact that a unidimensional core of academic course work would not serve the needs, interests, and abilities of all the students the schools are intended to serve (Cross 1984; Smith and Hester 1985). In general, they paid little attention to the need for adequate vocational preparation of that 80 percent of the student population who never complete a college course of study–the "neglected majority" noted by the National Association of State Councils on Vocational Education. Tucker and Mandel (1986) refer to this shortcoming as the Achilles heel of the resurgence of interest in the educational system.

Another shortcoming of the different reform reports was their failure to deal in any detail with the rapid changes occurring in technology, the business world, and societal demographics, all of which have had and will continue to have over the current decade a significant impact on youth–both as students and members of the work force. Likewise, many of the reports totally ignored the needs of adults, who, it was predicted, would need to be reeducated and retrained every 10-15 years in order to meet the demands of a rapidly changing workplace (Carnevale 1987; Finn 1986; Hall 1982). In addition, although many of the reform reports called for the preparation of workers with "the ability to learn and to adapt to changes in the workplace" (Panel on Secondary School Education for the Changing Workplace 1984, p. xi), the strategies they suggested for attaining such an outcome were based upon what Wasserman (1987) contends is the misperception that such skills are a by-product of subject matter teaching. Furthermore, Kaplan (1985) has argued that many of the strategies suggested were not adequately grounded in the available research (for example, the "What Works" series of publications disseminated by the U.S. Department of Education).

Concerns with Improving Vocational Education

In general, many of the major reform reports were silent with regard to vocational-technical education, but the implication frequently drawn from their key proposals was clear: vocational education, particularly at the secondary level, was viewed as an elective and would have to be treated like other "nonessential" elements in the curriculum, that is, reduced in size if not eliminated. (It was at approximately this point in time that President Reagan even proposed ending federal appropriations for vocational education.) However, the press for the kind of unidimensional change and improvement in the educational system proposed as part of the "excellence movement" failed to respond to an array of dramatic changes that were occurring in the workplace. These shifts in the workplace served to highlight the need to prepare entry-level employees with quite different skills than those required of employees in the past. Furthermore, such changes proved to be making the skills of a growing number of adults obsolete, greatly expanding the need for new skills and increasing the need for widespread retraining programs. Some researchers (Carnoy, Shearer, and Rumberger 1983; Ferguson 1980; Goodman 1979; Naisbitt 1983; Pratzner and Russell 1984; Work in America Institute 1982) contended that the changes that were occurring promised to increase work specialization and at the

same time increase the need for greater employee flexibility and adaptability. As a result, they argued that vocational education and training programs are an essential element of the educational system and are needed to prepare workers not only to function effectively in specific jobs, but also to be able to adapt to new jobs and occupational requirements they are likely to encounter in the future.

Overall, it would appear that several of the key outcomes sought via the "excellence movement," particularly the increases sought in students' basic competency levels, are in keeping with the direction of skill changes occurring in the workplace. For example, in many of the earlier published reform reports, better education is treated as synonymous with improved basic skills, including reading, writing, math, science, and communications skills. The importance of competence in these skill areas has been reinforced by the results of a number of studies that indicate that basic cognitive skills and abilities are directly related to job performance (Henry and Raymond 1982; Hunter 1980; Hunter and Hunter 1984; Mikulecky and Ehlinger 1986; Mikulecky and Winchester 1983; Schmidt and Hunter 1981).

Although agreeing that such basics are necessary, researchers such as Wirth (1983), Oakes (1986), Berryman (1987), and Pratzner (1987) have contended that the proposed excellence reforms were not sufficient in regard to preparing the kind of skilled work force needed in the future as envisioned by Reich (1983) and others. Pratzner (1987), for example, argued that to develop higher quality workers educational institutions needed to focus on improving students' sociotechnical literacy. That concept includes the development of basic skills as well as "(1) higher order transferable skills, such as interpersonal and group process skills, problem solving and decision making, planning, and communication and (2) skills in the organization and management of production (for example, skills in business economics, business operations, and statistical quality control). It also includes an understanding of the philosophical underpinnings and consequences of the shift from a mechanistic, technological, scientific management perspective of work to a high worker involvement, participative management perspective" (Wirth 1986, p. 34). This contention that vocational-education must emphasize more than narrowly defined basic academic and job-specific technical skills has been echoed more recently by Copa (1992) and Gloeckner et al. (1992).

In broad terms, the kinds of shifts projected to occur in the vocational education delivery system if the sociotechnical perspective were adopted are summarized in Table 1. A somewhat similar restructuring was alluded to by Berryman (1987) and advocated by Oakes (1986). A central tenet of this perspective is that if the educational system is to train workers adequately for the year 2000 and beyond, then the void that exists between vocational and general (academic) education needs to be eliminated and vocational education needs to become part of the "common curriculum" in comprehensive schools. In addition, the vocational curriculum and related instruction need to be revamped so that the emphasis on job-specific skills is replaced by an emphasis on broader skills and processes that allow workers to adapt in a productive manner to changes in the workplace.

At the same time, the suggestions in Table 1 indicate several problems that were seen as existing generally across the educational system, not just vocational education. For example, they highlight the need for placing more emphasis on

TABLE 1

CURRENT AND EMERGING PARADIGMS OF VOCATIONAL EDUCATION

Components of a Paradigm	Vocational Education: Current Paradigm	Vocational Education: Emerging, Alternative Paradigm
An Image of the Subject Matter	- Entry-level skills development for specialized jobs - Content/subject area - Serves the interests of employers/jobs/society	- Alternative instructional approach to learning - Process oriented - Serves education and development needs of students
Beliefs in Particular Theories and Models	- Job analysis - Scientific method - Behavior modification - Teachers impart knowledge - Learning as product/emphasis on content - Acquiring "right" information once and for all	- Cooperative learning - Socratic questioning - Learning how to learn - What is "known" may change - Encourages autonomy - Supports general educational development of learner
Values	- Job placement/earnings - Employer satisfaction - Inculcate specialized skills for specific roles - Alternative track for academically lessable/less willing	- Individual performance in terms of potential - Egalitarian/democratic - Students assume responsibility for own learning - Achievement plus employment - Alternative approach to learning for all students
Methods and Instruments	- Lockstep progression - Norm-referenced grading/testing - Rigid, prescribed curricula - Traditional occupation service areas - Business/industry involvement	- Criterion-referenced grading/testing - Cooperative/group learning - Divergent thinking encouraged - Electives - Focus on transferable skills
Exemplars	- Most secondary and postsecondary programs, to varying degrees	- Some graduate-level programs - Some industrial arts/career education programs - Some career guidance programs
Social Matrices	- AVA divisions, convention, journal; student vocational clubs; federal legislation; state departments of vocational education	- Informal networks; Paideia Proposal; Society for Humanistic Education; AERA SIGS on School Effectiveness and Wholistic Education

SOURCE: Pratzner, F. C. "The Vocational Education Paradigm: Adjustment, Replacement, or Extinction." *Journal of Industrial Teacher Education* 22, no. 2 (1985): 5. Reprinted by permission.

the development of students' problem-solving and other reasoning skills. They also reinforce the need for giving attention to students' individual potential and alternative learning styles/preferences. In regard to curriculum and instruction, they highlight the need for different instructional approaches or teaching styles, cooperative learning, and the delegation of greater responsibility for learning to the students themselves, rather than the regimented, unimodal approach that currently characterizes instruction in public schools–an approach in which students are forced to spend at least 50 percent and often 85 percent or more of their classroom time as passive listeners (Boyer 1983; Goodlad 1984; Weber et al. 1988).

State-Level Initiatives on Work Force Preparation and Education

In response to the call for excellence, the attendant issues of competitiveness, productivity, and economic adjustment, and the adverse effects of associated economic change, all 50 states engaged during the mid-1980s in the development of strategies for improving their educational systems as well as their economic development and related job-training efforts. As a rule, these state-level responses have dealt with (1) strengthening the capacity of their education and training institutions to meet the short- and long-term training and retraining needs of workers and (2) establishing programs that allow them to react meaningfully to economic change and try to cushion its negative effects on communities and individuals (Ganzglass and Heidkamp 1987).

From a policy perspective, in *States and Communities on the Move: Policy Initiatives to Build a World-Class Workforce* (Gold et al. 1991), the strategies being employed by different states and communities are arrayed in terms of nine general categories. Those categories are as follows:

- Creating coordinated human resource investment planning bodies that focus on the development of human investment strategies and help coordinate the activities of education, training, and economic development agencies
- Establishing comprehensive school-to-employment transition policies
- Expanding the apprenticeship opportunities available to students
- Implementing technical preparation (tech prep) programs
- Increasing opportunities for youth community services
- Working to increase the number and nature of active partnerships involving business and education/training
- Developing alternative learning centers for those who have been unable to succeed in traditional educational settings or programs
- Initiating new pathways to postsecondary education (such as innovative support services and financial assistance) for youth who are not otherwise likely to be college bound
- Using creative funding mechanisms that fall outside the general appropriations process to support human investment activities involving education and training

Typically, the net results or outputs of these efforts were either focused reports (focused on student/worker demographics such as the Oregon Employment Division's "Is Oregon's Future at Risk?" [1989] or on perceived improvements needed in vocational education and job training) or sets of reports dealing with multiple emphases. Usually, the documents have an educational or a labor/human resources "slant" depending on the state agency that

had the "lead" in their preparation. In both cases the documents developed attempted to reflect the state's unique needs, concerns, and vision for the future. Furthermore, those documents often contained (1) a review of the major demographics of the state's projected future work force as well as their related employment "future"; (2) some level of assessment regarding the implications of projected demographic and employment changes/patterns in terms of potential future growth, employment, capacity, and the like; and (3) a set of goals and recommendations that described the types of student/worker outcomes or skills deemed important in order for the planned initiatives to be considered effective and that in some instances were seen as guiding those efforts. Many of the goals and related outcomes identified include those suggested by Pratzner's (1987) concept of *socio-technical literacy* and are reflected in the seven skill groups noted by Carnevale, Gainer, and Meltzer (1988):

1. Organizational effectiveness/leadership
2. Interpersonal/negotiation/teamwork
3. Self-esteem/goal setting–motivation/personal and career development
4. Creative thinking/problem solving
5. Communication–listening and oral
6. Three Rs–reading, writing, computation
7. Learning to learn

Some of the more specific types of student/worker outcomes or skills viewed as essential in several state reports like those alluded to here are summarized in Table 2. Those different outcomes are the products of numerous surveys, reviews, and discussions and in one sense provide a more complete picture of what could be deemed to be quality outputs of the education and vocational training system. In that regard, they go well beyond the level of specificity found in the early reform reports and more completely reflect what are perceived to be key worker needs in the contemporary and future workplace. For example, there is considerable overlap among the needs identified in the state reports and the "needs of employers" raised in the 14 studies reviewed by Natriello (1989) as well as the "basic skills" noted by Gloeckner et al. (1992). At the same time, however, they, like the earlier reforms reports and more current reviews by Natriello and Gloeckner et al., do not as a general rule include descriptions of the measures to be used to assess learners'/workers' competencies in the various skills identified or changes in their skill levels nor the levels of attainment deemed necessary across the various skills/outcomes noted.

Establishing the "Field of Play"– The President's and Governors' Goals for Education

Since initiation of the "excellence movement" over a decade ago hundreds of federal, state, and privately sponsored reports, plans, proposals, and schema for improving the U.S. educational system–both "academic" and vocational education–have been posited by an almost equally diverse array of panels, committees, teams, commissions, and organizations. Finally, after several "summit" meetings with the nation's governors and achievement of consensus on a set of six basic goals, President Bush (U.S. Department of Education 1991a) stated, "The time for all the reports and rankings, for all the studies and surveys about what's wrong in our schools is passed. If we

TABLE 2

A SAMPLING OF CRITICAL STUDENT/WORKER OUTCOMES IDENTIFIED IN STATE REPORTS

SOURCE	STUDENT/WORKER SKILLS IDENTIFIED
California - *Employability Competency System* (Eguez, Huie, and Rickard 1991)	Employability Competencies: reading, math, communication, and critical thinking measured via tests composed of items that address these skills within functional (occupational and "real life") contexts
Idaho - *Preparing for Idaho's Future* (Berman et al. 1991)	New Basics: reading, writing, math, science, computing, communication, problem solving, accessing and using information, global awareness Can-Do Attitude: high self-esteem, taking responsibility, persistence, high expectations Collaborative Ability: teamwork, negotiation skills, understanding democracy Adaptability: toleration for change, generalists skills and attitudes, learning to learn
Illinois - *Toward a World-Class Workforce* (Illinois Council on Vocational Education 1991)	Business and Labor's Nine Basic Skills: (1) reading, writing, and math skills; (2) communication skills, including listening and oral communication; (3) employability skills including work attitudes and responsibilities, and knowing how a business operates; (4) critical thinking, problem solving, decision making; (5) group and teamwork skills including interpersonal and social relations; (6) self-esteem, goal setting, and personal and career development; (7) keyboarding and computer literacy skills; (8) leadership skills and improving organizational effectiveness; and (9) basic concepts of technology systems
Indiana - *Executive Report of the Jobs for Indiana's Future* (Jobs for the Future 1989)	"New Basic Skills" (which parallel those posited by Carnevale, Gainer, and Meltzer 1988): Learning to learn; competence in reading, writing, and computation; communication–oral and listening skills; problem-solving, creative thinking, personal management skills–self-esteem, motivation/goal setting, employability/career development; group effectiveness skills–interpersonal, teamwork, negotiation; influence skills–organizational effectiveness and leadership
Missouri - *Jobs without People* (Governor's Advisory Council on Literacy 1989)	Basic Skills: reading, writing, counting Life Skills: understanding signs, labels, instructions, and directions Job Skills: critical thinking, decision making, adapting to change
North Dakota - *Maximizing Potential: For High-Quality Participation in the New Work Force* (North Dakota Council on Vocational Education 1989)	Applied Academic Skills: reading, writing, and computation skills that reflect their actual use on the job and/or in situations that simulate specific job tasks Work Force Basic Skills: learning to learn, listening, speaking, problem solving, creative thinking, personal and career development, self-esteem, goal setting/motivation, teamwork, interpersonal skills, negotiation, leadership, and organizational effectiveness Basic Living Skills: individual, child, and family development; consumer and resource management Technological Literacy: technological awareness and keyboarding and computer use skills

TABLE 2–Continued

SOURCE	STUDENT/WORKER SKILLS IDENTIFIED
Ohio - *Ohio's Future at Work* (Ohio Department of Education 1990)	Occupational Skills: those skills involving the technical abilities to perform required workplace tasks, including problem solving and critical thinking Academic Skills: those core competencies (including science, mathematics and English/language) necessary to prepare for and secure a career, facilitate lifelong learning, and ensure success in a global economy Employability Skills: those capacities, attitudes, and values required to enter, compete, and remain successfully in the work force including self-employment. These skills include, but are not limited to, decision making, critical thinking, teamwork, following directions, willingness to work; and job search, application and self-marketing skills
Oregon - *Oregon Educational Act for the 21st Century* (Oregon Department of Education 1991)	Student Skills: reading, writing, reasoning, information retrieval, problem solving, listening, speaking, critical thinking, working effectively alone and as part of a group, and knowledge of social studies, foreign language, humanities, the visual, performing, and literary arts, advanced mathematics and sciences
Pennsylvania - *A State Prepared: Developing Pennsylvania's Work Force* (Pennsylvania Economic Development Partnership 1991)	Basic Skills: read and comprehend policy and instructional manuals as well as technical materials; write sentences with correct form, spelling, punctuation, and grammar; recognize and correct errors in written materials; add, subtract, multiply, and divide; work with fractions and decimals; explain ideas clearly; and ask and answer questions and follow verbal directions Attitudes: learn, be flexible, and respond quickly to change; learn and perform multiple tasks; analyze and choose from a variety of options, identify problems, recognize alternatives, and select the most appropriate alternative; operate independently after an appropriate training period; work cooperatively with people of different personalities, race, sex, across different authority levels, and organizational divisions; and be punctual, dependable, and show pride and enthusiasm in performing well Technical Skills: ability to measure; type with accuracy and speed; work accurately with computers and computerized programs

NOTE: No claim is made regarding the "representiveness" of the set of reports listed in Table 2. They are meant to be only illustrative.

want to keep America competitive in the coming century, we must stop convening panels to report on ourselves. And we must accept responsibility for educating everyone among us, regardless of background or disability!" (p. 2). According to Mr. Bush, "To those who want to see real improvement in American education, I say: There will be no renaissance without revolution" (p. 3).

At the same time, the President argued, "We spend 33 percent more per pupil in 1991 then we did in 1981–33 percent more in real, constant dollars–and I don't think there is a person anywhere in the country who would say that we've seen a 33 percent improvement in our schools and performance . . . dollar bills don't educate students" (p. 3).

The starting point for the revolution in education called for by Bush was the set of six national education goals that evolved from the education summits held with the state governors. Those six goals are as follows:

America's Education Goals

By the year 2000:

1. All children in America will start school ready to learn.

2. The high school graduation rate will increase to at least 90 percent.

3. American students will leave grades four, eight, and twelve having demonstrated competency in challenging subject matter including English, mathematics, science, history, and geography; and every school in America will ensure that all students learn to use their minds well, so they may be prepared for responsible citizenship, further learning, and productive employment in our modern economy.

4. U.S. students will be first in the world in science and mathematics achievement.

5. Every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship.

6. Every school in America will be free of drugs and violence and will offer a disciplined environment conducive to learning." (ibid., p. 19)

The operational strategy or means to be used to achieve these different goals is the four-part America 2000 Education Strategy. In the sourcebook describing that strategy the four parts are envisioned as trains that are "departing at the same time on parallel tracks on the long journey to educational excellence" (U.S. Department of Education 1991b, p. 12). The different parts of the America 2000 Strategy and their related goal emphases are as follows:

PARTS OF AMERICA 2000 STRATEGY	RELATED GOALS
1. For Today's Students: Better and More Accountable Schools	• All six goals, but especially #2 (90 percent graduation rate for high schools), #3 (competence in core subjects), and #4, (first in the world in science and math)
2. For Tomorrow's Students: A New Generation of American Schools	• All six—they represent the primary standards against which every "New American School" is to be measured
3. For the Rest of Us (Yesterday's Students/ Today's Work Force): A Nation of Students	• All six, but especially #5 (adult literacy, citizenship, and ability to compete in the workplace)
4. Communities Where Learning Can Happen	• All six, but especially #1 (children starting school ready to learn) and #6 (drug and violence-free schools)

Following establishment of the six National Education Goals at the Education Summit in 1989, the National Education Goals Panel (NEGP) was created in July 1990. That group, which includes 6 governors, 4 members of the administration, and 4 members of Congress, was charged with measuring progress toward achieving the 6 goals over 10 years. ***The National Education Goals Report: Building a Nation of Learners*** (NEGP 1991) represents an initial effort by the panel to assess current educational performance relative to each of the six goals–the establishment of a baseline or reference point for tracking movement in the future and determining whether the efforts initiated under America 2000 are making a difference. The three major sections of that report are as follows:

- "Chapter 1: Indicators for the 1991 Report" presents summary descriptions of the nation's and individual states' status relative to achieving the different education goals based upon data derived from a number of sources.

- "Chapter 2: Indicators for Future Reports" highlights the significant gaps in currently available data regarding the various goals and summarizes proposals for creating new measures/indicators that could be used to help fill those information voids.

- "Chapter 3: The Federal Role in Meeting the National Education Goals" describes the role of the federal government in helping to achieve the six goals and in documenting progress relative to those different outcomes.

With regard to the question, "How are we doing?" the panel generally concluded–

> This report shows that we are making progress in some areas. Schools are educating increasing numbers of diverse students, and more of those students have acquired minimum skills than ever before in the nation's history:
>
> - High school completion is at an all-time high. Eighty-three percent of all 19- and 20-year-old Americans have finished high school or its equivalent.
>
> - Achievement in science and mathematics has improved over the last decade, especially among minority groups.
>
> - Most young adults have mastered basic literacy skills. Almost all 17-year-olds attending school can read functionally.
>
> - The incidence of drug use in the schools has declined in recent years.
>
> These accomplishments are nontrivial, and they result from purposeful action. They reflect an enduring commitment to universal education as the right of individuals in a free nation. But they fall far short of what is needed to secure a free and prosperous future.
>
> What we hope to communicate in this report is that the performance gap is real; it is a threat to our future, and it cannot be attributed to others–other students, other schools, other states. It is about us–all of us. Our performance will not improve significantly until we all accept responsibility for raising our own levels of knowledge and skill and for supporting the learning of others in our families and communities. (pp. ix-x)

A number of nationally recognized educators and social scientists (William T. Grant Foundation 1991) have generally agreed that "the goals [of America 2000] are ambitious and worthy of the commitment of every educator, citizen, and political leader. Unfortunately, the President's strategy to achieve the goals falls somewhat short" (p. 9). The major concerns raised by that group of "experts" deal with the following:

- The issue of choice and competition, which has not been adequately demonstrated as a viable approach to improving education, yet represents a major underlying thrust, if not assumed solution, under the America 2000 Strategy

- The focus on national testing without adequate consideration of its costs, problems, and drawbacks

- Its exclusive emphasis on demonstration schools, the number of which is extremely small, and the almost complete exclusion of critical individual and community factors

- The proposed use of R & D teams, whose roles and approaches are inadequately defined

- The reliance on a "business model" with its periodic, sometimes debilitating "swings," which may not be at all appropriate for education where one must strive for consistent quality regardless of "market conditions"

- Its underlying assumptions, which are seen as flawed and in some instances as not supporting the strategic initiative proposed

- An almost total disregard for the philosophical, historical, and research precedence in the field, much of which does suggest strategies/approaches that can work

- The disregard, if not disdain, shown for professional educators–teachers, administrators, counselors, and researchers–and the associated bodies of professional knowledge, strategies, approaches they have developed/proposed

- The absence of a systematic perspective regarding the unique needs of "special" students, for example, the disadvantaged and disabled, and ways of addressing those needs while combatting their associated negative effects

- An apparent lack of concern for the financial structure and policy system surrounding public education

- Its insistence that no new money is needed to strengthen education and improve schools, yet its proposed expenditure of approximately $1 million to "establish" each of 535+ demonstration schools (with one "conveniently" located in each congressional district), which equals roughly half of the total federal expenditures for vocational education

- The lack of concern for the social/cultural diversity of society and the multiple roles played by schools

In a related vein, Giroux (1992) cautions–

> A central thrust for the current reform movement [as reflected in America 2000] has been to forge a new alliance between the corporate sector and schools. In this case, the business of leadership narrows the relationship between democracy and freedom by leading schools down the path of

corporate ethics and marketplace ideology. . . .

This view of educational leadership is paradoxical. Not only does it ignore the language of community, solidarity, and the public good; it also draws unproblematically upon a sector of society that has given the American public the savings and loan scandals, the age of corporate buyouts, the proliferation of "junk" bonds, insider trading, and the large increase in white-collar crime. It has also produced multinational corporate mergers that eliminate jobs and violate the public trust, and it has made leadership synonymous with the logic of the bottom line, self-interests, and corporate avarice. (pp. 6-7)

A Counterview–
The Sandia Labs Study

A number of the basic concerns raised regarding America 2000 by the panel of "experts" have been echoed and reinforced in several documents issued by Sandia National Laboratories. Those documents summarize the results of a set of analyses regarding education completed by members of the labs' Systems Analysis Department. That effort (Wartell and Huelskamp 1991) "provides an objective 'outsider' perspective on the status of education in the United States" (p. 2). The principal findings reported (Carson, Huelskamp, and Woodall 1991) include the following:

- **Expenditures for Education.** Over the last 2 decades much of the increase in educational expenditures has been in the area of special education, not "regular" education–according to their estimates about 25-35 percent of all K-12 expenditures are directed toward the 10 percent of the population who qualify for special education; the modest increases that have occurred in educators' salaries consistently follow the increases in average household income in the United States; compared to other industrialized countries the U.S. spending for "regular" education is about average.

- **Dropout Rates.** On-time high school graduation rate has been roughly 75-80 percent over the last 20 years, and the overall high school completion rate (including GEDs) for young adults is over 85 percent, and is one of the best in the world; dropout rates for minorities and urban students are significantly higher than the dropout rates for other students; the recent immigration of undereducated Hispanic youth has significantly inflated the dropout rate for that portion of the population.

- **National Assessment of Educational Progress and Scholastic Aptitude Test (SAT) Results.** Generally, performance has been steady or increasing in the basic skills areas; the authors argue that the much publicized "decline" in average SAT scores is directly attributable to the fact that more students in the third and fourth quarters of their high school classes are taking the SATs than did in the past; despite a slight increase in SAT performance across the overall population, minority students' scores tend to be significantly lower than those of their white peers.

- **College and University Enrollment.** About 60 percent of today's youth attempt some type of postsecondary education (40 percent enroll in 4-year institutions) and 25 percent eventually obtain a bachelor's degree, which is

the highest such rate in the world; approximately 4-5 percent of U.S. youth have earned technical bachelor's degrees in the natural sciences and engineering during each of the last 20 years; although significant percentages (50 percent of engineering and 25 percent of the science) of Ph.D.s are awarded to non-U.S. citizens, about half of those recipients remain in the United States after receiving their degrees; female and minority technical degree attainment continues to be far behind that of white males.

- **International Comparisons.** The Sandia Lab analysts found little credible data regarding these comparisons, particularly given the problems of "single point" comparisons and grossly different sample sizes (for example, "random" nationwide samples of U.S. students versus very small samples from some other countries); only two other countries exceed the United States in the percentage of 17-year-olds enrolled in school; the United States leads in the world in the percentage of young people obtaining bachelor's degrees (both technical and nontechnical degrees) and in the percentages of degrees obtained by women and minorities.

- **Status of Educators.** The analysts found that direct quantitative measurements of teacher status are difficult to obtain; available indirect measurements such as interview data, opinion polls, and so on indicate that the status of educators is low, both within and outside the profession.

- **Changing Demographics.** This is viewed as a dominant influence on future education requirements; immigration was higher in the 1980s than in any other decade since the 1920s and it is estimated that 5 million children of new immigrants will enter the K-12 education system during the 1990s; changes in family structure, such as the incidence of single-parent families and families in which both parents work, are persistent and accelerating, and exerting major influences on the "business" of schools as engineers of social change.

- **Education Goals.** The analysts found that the call for educational reform is widespread and includes many voices; however, some of the initiatives suggested as means for addressing the goals of reform may be in conflict, which could result in small or no gains being observed or even setbacks (see Exhibit 1). Forming a consensus on what national goals are (not just the six goals agreed to by national political figures) may be the greatest challenge facing education today.

- **Work Force Skills.** A review of available research led to the conclusion that few companies point to inadequate preparation of new employees, but rather focus on "social skills" such as punctuality and appearance; the business community is not uniformly responding to any forecasted "crisis" in work force skills; even if the K-12 educational system markedly improved the skills of its students, the impacts of those efforts will not be felt in the workplace for 10-20 years and thus make a limited contribution to improving the economic competitiveness of U.S. business. (See figure 3.)

Overall, the conclusions drawn from the Sandia Labs study, which were echoed and expanded upon by Berliner (1992), suggest that the major impediments to educational improvement that need to be overcome are (1) the systemwide "crisis" rhetoric, (2) the misuse of simplistic measures of dubious value, (3) the preoc-

cupation with education's perceived link to economic competitiveness, and (4) the continued focus on forecasted shortages in technical degrees. In addition, although the perspective raised by these documents does not address all aspects of the America 2000 Strategy (such as choice and competition), it does raise a number of important cautions and concerns regarding the validity of the assumptions underlying that overall strategy and clearly echoes a number of the issues raised by the experts in *Voices from the Field: 30 Expert Opinions on America 2000, The Bush Administration Strategy to "Reinvent" America's Schools* (William T. Grant Foundation 1991) as well as by Giroux (1992) and Berliner (1992). Perhaps this counterview is best expressed by one of those experts, George Hopkan, who noted in his commentary–

> with *America 2000*, international economic competitiveness appears to be the key reason for improving our schools. But this time around, the reformers are not merely asking the schools to adjust to new demands, as they have always done successfully; instead we are faced with an all-out "crusade" to turn public education on its head, principally, it appears, to promote our foreign policy interests and the agenda of American business. These are perfectly legitimate national objectives, but they should not stand as the rationale for upending our historically effective system of public education. (p. 11)

EXHIBIT 1

EXAMPLES OF POTENTIAL CONFLICTS AMONG PROPOSED CHANGES IN EDUCATIONAL PROCEDURES

Parental Choice	Support for Troubled Schools
Back to Basics	Increased Flexibility
Lifetime Learning	Early Identification and "Pipelining"
Improved National Test Scores	Increased Access
College Preparation	Workforce Preparation
Emphasis on Local Needs	National Curriculum and School Comparisons
Fewer Dropouts	Tougher Standards
Legislated Improvements	Site-Based Management
Increased Special Education	Decreased Special Education "Pull-Out" Programs

SOURCE: Carson, C. C.; Huelskamp, R. M.; and Woodall, T. D. *Perspectives on Education in America. Annotated Briefing.* Albuquerque, NM: Sandia National Laboratories, 1991, p. 165. Reprinted by permission.

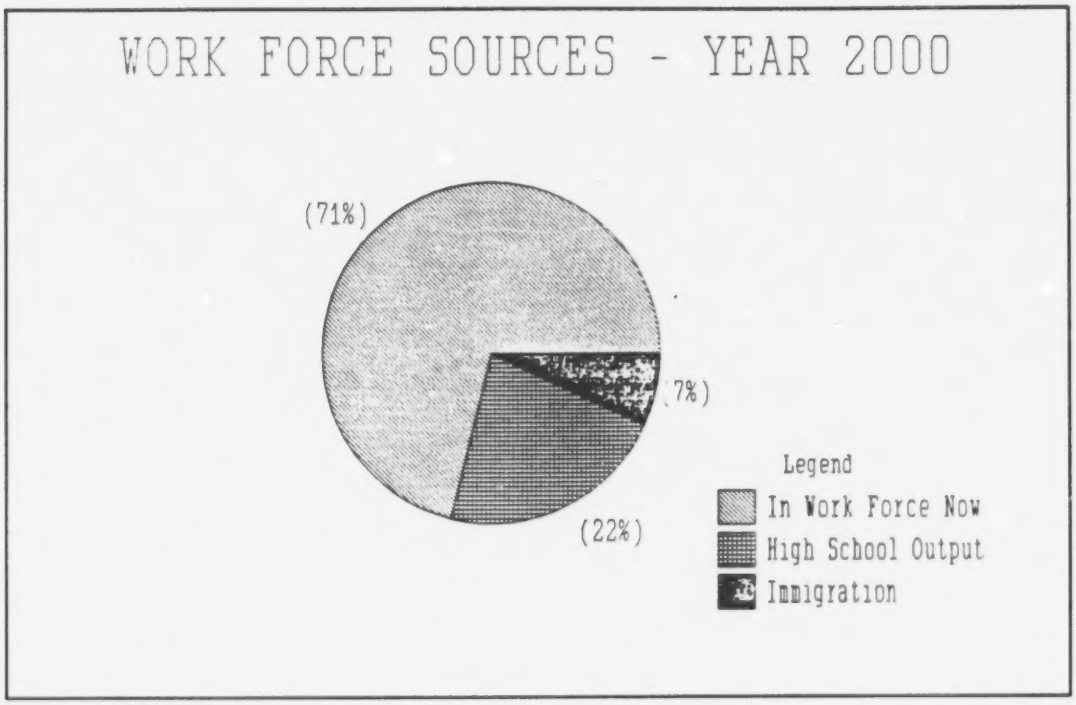


Figure 3. Key sources of the work force in the year 2000

SOURCE: Carson, C. C.; Huelskamp, R. M.; and Woodall, T. D. ***Perspectives on Education in America. Annotated Briefing.*** Albuquerque, NM: Sandia National Laboratories, 1991, p. 125. Reprinted by permission.

IMPROVING THE QUALITY OF WORK FORCE PREPARATION

Although America 2000 has not generated universal support, particularly with regard to its operational tenets, it has given rise to, or at least has been paralleled by, several other efforts that are also national in scope but focused more on improving the skills of the nation's future work force. That is, they are aimed at helping the country prepare a world class, globally competitive work force. Three of these efforts are as follows:

1. *Investing in People: A Strategy to Address America's Workforce Crisis* (Commission on Workforce Quality and Labor Market Efficiency 1989)

2. *America's Choice: High Skills or Low Wages!* (Commission on the Skills of the American Workforce 1990)

3. *What Work Requires of Schools* (Secretary's Commission on Achieving Necessary Skills [SCANS] 1991).

Although the first two of these documents predate the release of America 2000 and the third "speaks directly to those goals and strategies" (SCANS 1991, p. xix), all three are basically cut from the same cloth and reflect the philosophical and related education/training views (if not the political agenda) of the same administration.

It should be pointed out that although an array of different documents dealing with work force skills have been published recently (for example, Boyett and Conn 1991; Carnevale 1991; Kolberg and Smith 1992; Reich 1992; and Thurow 1992), the decision was made to limit the current synthesis and critique to the three reports listed due to the frequency with which they have been cited by policy makers and the press as well as their consonance with the general philosophical and operational perspective represented in America 2000. Furthermore, they have enjoyed relatively wide circulation through the U.S. Department of Labor, much like the "What Works" publications disseminated in the mid-1980s by the U.S. Department of Education under Secretary Bennett. [For example, "some 100,000 reports, 200,000 *Executive Summaries*, and 200,000 *Letters to Parents, Employers, and Educators* have been distributed by the SCANS office" (SCANS 1992, p. ix).]

Generally speaking, the "roots" of these three documents, as well as America 2000, can be traced in part to the calls raised in the myriad of reform reports that evolved from the "excellence movement" of the early to mid-1980s. They were also directly influenced by several key studies of U.S. work force skills undertaken in the late 1980s. Two of those seminal studies are ***Workforce 2000: Work and Workers for the 21st Century*** (Johnston and Packer 1987) and ***The Forgotten Half*** (William T. Grant Foundation 1988a,b). Furthermore, each commission undertook its own unique research and information-gathering initiative.

Overviews of the Three National Work Force Preparation Reports

The Commission on Workforce Quality and Labor Market Efficiency was charged by the U.S. Secretary of Labor with making specific recommendations on ways to increase the excellence of the U.S. work force. It was the earliest of three efforts and yielded a final report that contained 44 recommendations for coordinated action by the government and private sector for improving the level of achievement and literacy in the school-age population and the adult work force. Those 44 recommendations are grouped as follows:

- 14 recommendations that include a call for commitment to education that is "as ambitious and aggressive as our past commitment to space exploration" (p. 7)

- 14 recommendations that involve such issues as guarantees of lifetime access to basic skills education, emphasis on basic skills remediation in the Job Training Partnership Act, as well as the collection and demonstration of information about "best practices" in adult basic skills education

- 14 recommendations dealing with ways of reducing barriers that prevent some people from fully participating in the labor force, creating supportive work environments that ease the tension between work and family responsibilities, matching job seekers with job vacancies, and increasing productive efficiency through worker participation in the management process and innovative compensation arrangements

- 2 recommendations focused on the need for additional support for the collection of labor market data by the Bureau of Labor Statistics and the need for the Departments of Labor and Education to establish a human resource research agenda that will help inform public policy and private action

The second key document, ***America's Choice: High Skills or Low Wages!***, represents the final report of the Commission on the Skills of the American Workforce created by the National Center on Education and the Economy. In that report a basic question is posed: Is there a skills shortage in the United States? The authors offer two answers–

> <u>No</u>, if we stay with a low wage model because under this model employers basically want employees with good attitudes, good work ethic, reliability, good personality, and a pleasant appearance
>
> **<u>versus</u>**
>
> <u>Yes</u>, if we hope to continue our high living standards, increase productivity, compete worldwide, and have workers who can learn and be flexible.

Five recommendations were subsequently presented by the commission:

1. A new educational performance standard–represented by a Certificate of Initial Mastery–should be established nationally and benchmarked to the highest in the world and should be set for all students to meet by age 16.

2. The states should take responsibility for ensuring that all students achieve the Certificate of Initial Mastery and with federal assistance should create alternative learning environments for those who cannot.

3. A comprehensive system of technical and professional education certificates and associate degrees should be developed for the majority of students and adult workers who do not pursue baccalaureate degrees.

4. Employers should be given incentives and assistance to invest in further education and training of their workers and to pursue high productivity forms of work organizations.

5. A system of Employment and Training Boards should be established by federal and state governments, together with local leadership, to organize and oversee the new high performance education and training system being proposed.

The Secretary's Commission on Achieving Necessary Skills (SCANS) was charged with examining the demands of the workplace and assessing whether young people are capable of meeting those demands as well as advising the Secretary of Labor on the level of skills required to enter employment. In keeping with this charge, their report, ***What Work Requires of Schools–A SCANS Report for America 2000***, deals with "defining the skills needed and proposing acceptable levels of proficiency for them" (SCANS 1991, p. xiii). The major conclusions drawn by the SCANS panel are as follows:

- All American high school students must develop a new set of competencies and foundation skills [see Exhibit 2] if they are to enjoy a productive, full, and satisfying life.

- The qualities of high performance that today characterize our most competitive companies must become the standard for the vast majority of our companies, large and small, local and global.

- The nation's schools must be transformed into high-performance organizations in their own right. (p. vi)

A Crosswalk among the Three National Work Force Preparation Proposals

Although the specific strategies represented by the recommendations posited in the three national work force preparation reports differ considerably in their general nature and focus, they are in rough agreement on several basic issues. Among those agreements are the following:

- International economic competitiveness/success and the attendant emphasis on work force preparation represents a viable and valuable goal that should serve as the focal point for guiding education/training reform efforts.

- The country is currently in trouble regarding its ability to compete successfully in the global economy and unless the quality of the work force, both current and future, is improved, the problem will get worse.

- Any solutions to the current dilemma require the commitment and active participation of the education/training system at all levels, private industry, business, and labor in a cooperative effort.

- The constellation of skills that should characterize the work force are those needed by workers in "high productivity forms of work organizations" or "high-performance businesses and organizations" (see Exhibit 3).

- Some set of "standard" competencies and related assessment mechanisms

EXHIBIT 2

WORKPLACE KNOW-HOW

The know-how identified by SCANS as needed for solid job performance is made up of a three-part foundation and five competencies that define a constellation of required skills and personal qualities.

THE FOUNDATION–competency in the workplace requires:

- **Basic Skills**–reading, writing, arithmetic, speaking, and listening
- **Thinking Skills**–creative thinking, decision making, problem solving, knowing how to learn, and reasoning
- **Personal Qualities**–individual responsibility, self-esteem, sociability, self-management, and integrity

THE COMPETENCIES–hallmarks of today's expert worker include:

- **Resources**–allocating time, money, materials, space, and staff
- **Interpersonal Skills**–working on teams, teaching others, serving customers, leading, negotiating, and working well with others from culturally diverse backgrounds
- **Information**–acquiring and evaluating data, organizing and maintaining files, interpreting and communicating, and using computers to process information
- **Systems**–understanding social, organizational, and technological systems, monitoring and correcting performance, and designing or improving systems
- **Technology**–selecting equipment and tools, applying technology to specific tasks, and maintaining and troubleshooting technologies.

SOURCE: Secretary's Commission on Achieving Necessary Skills (1991)

EXHIBIT 3

CHARACTERISTICS OF TODAY'S AND TOMORROW'S WORKPLACE

TRADITIONAL MODEL	versus	HIGH PERFORMANCE MODEL
STRATEGY		
• Mass production		• Flexible production
• Long production runs		• Customized production
• Centralized control		• Decentralized control
PRODUCTION		
• Fixed automation		• Flexible automation
• End-of-line quality control		• Online quality control
• Fragmentation of tasks		• Work times, multiskilled workers
• Authority vested in supervisor		• Authority delegated to worker
HIRING AND HUMAN RESOURCES		
• Labor-management confrontation		• Labor-management cooperation
• Minimal qualifications accepted		• Screening for basic skills abilities
• Workers as a cost		• Work force as an investment
JOB LADDERS		
• Internal labor market		• Limited internal labor market
• Advancement by seniority		• Advancement by certified skills
TRAINING		
• Minimal for production workers		• Training sessions for everyone
• Specialized for craft workers		• Broader skills sought

SOURCE: Office of Technology Assessment (1990)

needs to be posited and used to evaluate students'/workers' progress (which in composite serves to define operationally the nation's overall progress) in achieving the outcomes or skills deemed essential in a high quality work force.

- Parents, local schools/educators, and individual employers are central to the success of any effort to improve the work force's preparation.

- Each strategy is dependent on students, educators, employers, and others to alter radically their specific behaviors, as well as their general philosophical and operational perspectives, yet none appears to incorporate a strategy or scheme for achieving the level of concern, commitment, and support required to bring about the changes proposed.

The three strategies appear to differ the most in three areas (Boston Regional Office of the U.S. Department of Labor 1992). Those areas are–

- the use of a marketplace/volunteer approach to the implementation of proposed solutions versus a stronger centralized (national) approach;

- the nature, source, and duration of the financial investment deemed necessary to implement the strategy proposed; and

- the nature and level of specificity of their attendant recommendations.

The more specific issues, in addition to the broad areas of agreement and disagreement, that are addressed in this crosswalk are as follows:

- Who authored and who commissioned the respective documents?

- How did the authors view their respective mandates?

- How many and what were the emphases of the recommendations made?

- What were the projected costs and suggested financing strategies proposed?

- What role is business assumed to play?

- What relationships exist between what is recommended and the mandates of the Employment Service (ES) and Job Training Partnership Act (JTPA)?

- What implications do the recommendations hold for schools and the current "delivery system"?

- What relationships exist with regard to Perkins Act requirements in the areas of basic skills enhancement, vocational skills development, and access/equity concerns?

A summary of how each of these issues is addressed by each of the three national strategies is presented in Table 3.

A review of the material summarized in this table reveals a number of the differential emphases and related variations that exist across the three general strategies, along with the variations that exist in the specific operational paths they feel should be pursued. Obviously, none of the strategies is right, whereas the others are wrong. Two very basic, yet critical ommissions in all three reports are (1) the absence of clear discussion regarding how their proposed changes and associated strategies would relate to and affect the nation's existing vocational-technical education system (particularly as it struggles with implementation of the Perkins Act and other educational reform legislation–both state and federal), and

(2) the lack of specific, consensus-building plans focused on marshalling the acceptance, support, and final resources needed to implement the proposed agenda of each. It would also have been most helpful if the three commissions had sat down in a single group and pulled together a common set of recommendations or joint strategy–a strategy that took the "best" from each proposal, alleviated the subtle, verbal yet nonsubstantive differences among proposals, detailed some critical issues not adequately described in any of the current documents (such as specific cost estimates and performance standards for all suggested programs), and reflected a compromise position on some of the "hard" issues (such as financing, special needs groups). It appears the intents of all three commissions were quite similar and the strategies they proposed, although divergent; are not irreconcilable nor totally incompatible.

TABLE 3

"CROSSWALK" SUMMARY–THREE WORK FORCE PREPARATION STRATEGIES

ISSUES	STRATEGIES: Investing in People (1989)	America's Choice (1990)	SCANS (1991)
• **Authors (Size) and Source of Support**	- Commission on Workforce Quality and Labor Market Efficiency (20) established by the Secretary of Labor.	- Commission on the Skills of the American Workforce (34) created by the National Center on Education and the Economy.	- The Secretary's Commission on Achieving Necessary Skills (30) established by the Secretary of Labor.
• **Perceived Charge**	- To make specific recommendations to the Secretary on ways to increase the excellence of the U.S. work force.	- To define the changes in training, education, and the workplace needed to put the United States on at least an equal footing with its foreign competitors.	- To define skills needed for employment, propose acceptable levels of proficiency, suggest ways to assess proficiency, and develop a dissemination strategy for schools, business, and homes.
• **Number and Nature of Recommendations**	- 44; dealing with incentives to inspire greater student achievement, involving business in tying career opportunities to school performance, and supporting programs for improved teacher and school performance, establishing an environment that encourages employer investments in work force quality, having government provide education and training that addresses needs not met by private sector, enhancing work force efficiency through creation of more flexible working arrangements, facilitation of worker-job matches, and use of employee relations innovations.	- 5; setting a new educational "standard" that is "benchmarked" to the highest in the world, having states be responsible for seeing that all students achieve the established standard, developing a meaningful system of certificates, degrees, etc. for those who do not pursue the baccalaureate, giving employers incentives to train workers and pursue high production forms of work organization, establishing a system of Employment and Training Boards to oversee the high performance education and training system proposed.	- 3; having all students develop the three foundation skills and five work-related competencies, having the qualities that characterize high performance companies become the standard for business and industries, transforming the nation's schools into high performance organizations.
• **Costs of Financing**	- With regard to school-based programs, all that is noted is that more money will be needed; with regard to employer training/retraining, it is proposed that (1) a corporate income tax credit for education/training expenses be granted, (2) a personal income tax exemption be reinstated for all employer-provided education and training, and that multi-employer training programs be encouraged; the Adult Basic Education Act should be expanded by $64 million per year.	- Costs for independent examining organization not discussed; costs for Youth Centers to come from school districts (e.g., from reallocating state/federal dollars that go to wealthier districts) or new resources (source unnamed); possible "GI Bill" system funded from general revenues or a self-financing scheme—panel to be established to make related recommendations; costs required to make employees ready to function in high production organizations supported via a required 1 percent (Skills Development Fund) payroll tax; nothing said about the financing of proposed Employment and Training Boards and their activities.	- Costs are not specifically discussed, although it is stated that the "changes will not be free of charge" and alludes to the demonstration schools proposed in America 2000 with their $535+ million cost.

TABLE 3—Continued

ISSUES	STRATEGIES: Investing in People (1989)	America's Choice (1990)	SCANS (1991)
• **Role of Business and Industry**	- Working more closely with schools to help students understand and meet the educational standards required for labor market success, to encourage pursuit of scientific/technical courses of study, to reward students who excel in science/math, to develop easily understood credentials for use when making hiring decisions, and to help restructure the schools, to increase their efforts to train/retrain their current work force.	- Helping define the standards related to Certificate of Initial Mastery and Occupational Competency Certification; reorganizing into high performance companies; serving on local Employment and Training Boards; paying the 1 percent Skills Development Fund tax.	- Reorganizing into "high performance environments"; investing routinely in the skill development of their employees, telling schools the skills their workers need and working with them to accomplish that result, using DOL-provided materials to confirm the SCANS skills/competencies required of their workers.
• **Relationship(s) with ES and JTPA**	- ES should work with schools to establish school-based employment services with direct connections to employers; DOL should invoke JTPA-like performance standards for ES. - Increase JTPA funds for those needing remedial education; increase JTPA funding to allow a larger percentage of those eligible to be served; increase funding for Job Corps; expand JTPA funds for statewide training programs for the disadvantaged; and create a committee with JTPA representation charged with merging education and training programs.	- No mention made of ES. Only mention made of JTPA is that Employment and Training Board might coordinate JTPA programs and funds.	- No mention made of ES. JTPA should provide training in the SCANS proficiencies to those they serve.
• **Implications for Current Educational Delivery Systems**	- School structure/governance would remain the same but be strengthened, e.g., be "fundamentally restructured" so they are better able to attain the goals of reform and a better trained work force; be more involved with business; secure more inputs from business/industry regarding worker skills; develop curriculum in applied instruction and higher-level skills development; increase performance expectations for all students; encourage more students to be involved in science, technology, and math; develop easily understood credentials and transcripts; strengthen teacher competencies; and set up a system for rewarding and recognizing good teachers and schools.	- Schools will need to restructure into high performance organizations; will need to accommodate the assessment tests required for the Certificate of Initial Mastery and refocus their curricula on the objectives addressed via those assessments; would need to find way(s) to transfer responsibility (and resources) to Youth Centers for those who do not attain the Certificate of Initial Mastery; will need to interface with Training Boards, Certification Panels, and those responsible for delivering the proposed sets of certificates and degrees.	- Schools must be transformed into high performance organizations; must revamp their curriculum—focus on placing learning objectives within a real world environment rather than teaching in the abstract and on addressing the five SCANS competencies; direct implications for teacher education (i.e., its substance/context) and for the field of administration and supervision; see Exhibit 4 for other areas of needed change.

TABLE 3–Continued

ISSUES	STRATEGIES: Investing in People (1989)	America's Choice (1990)	SCANS (1991)
• **Relationships with Perkins Requirements**	- Deals with improvements in students' basic skills; use of applied academics; improvements in transition from school to work; does not address technical skills development much; schools with business/industry should encourage pursuit of science/technology courses by minority and female students; emphasis should be placed on "franchising" disadvantaged and disabled adults and improving their basic and job-related skills.	- Focuses upon enhancing students' basic skills via the Certificate of Initial Mastery; occupational/vocational skills enhancement is noted via occupational certification, but related training activities are not mentioned except in regard to the Youth Centers where "learning by doing" is noted; although the special needs of certain students, e.g., the economically disadvantaged, are considered, e.g., via the Youth Centers, the specifics of how their needs will be addressed are not described/discussed.	- Mentions the emphases on basic skills enhancement and applied learning; does not mention vocational skills development other than "work" service as a unifying concept; access/equity is not mentioned, but it is implied that such issues will be resolved because everyone will be "turned on" and "tuned in."

EXHIBIT 4

CHARACTERISTICS OF TODAY'S AND TOMORROW'S SCHOOLS

SCHOOLS OF TODAY	versus	SCHOOLS OF TOMORROW
STRATEGY		
• Focus on development of basic skills • Testing separate from teaching		• Focus on development of thinking skills • Assessment integral to teaching
LEARNING ENVIRONMENT		
• Recitation and recall from short-term memory • Students work as individuals • Hierarchically sequenced–basics before higher order		• Students actively construct knowledge for themselves • Cooperative problem solving • Skills learned in context of real problems
MANAGEMENT		
• Supervision by administration		• Learner centered, teacher directed
OUTCOME		
• Only some students learn to think		• All students learn to think

SOURCE: SCANS (1991)

PERFORMANCE MEASURES/STANDARDS AND THE ASSESSMENT OF ESSENTIAL WORKPLACE SKILLS

In America 2000, as well as the three national reports on work force preparation–*Investing in People, America's Choice*, and *What Work Requires of Schools*–reference is made on a number of occasions to the need for standards that will be used to evaluate the performance of both students and schools. According to Edgerton (1991), this is part of a growing consensus across a broad array of agencies and organizations (many of which are outside the normal educational arena) that new, more meaningful, if not more demanding, educational standards must be adopted if the United States is to remain competitive in the global marketplace. "There are many diverse groups marching under the banner of 'accountability for results,' 'a national examination system,' 'national testing,' and 'new curricular standards'" (p. 9).

Although diverse in their orientations and goals, the different groups noted by Edgerton are concerned with testing (or how the outcomes of the educational system are measured) and benchmarking or evaluating those outcomes in relation to other nations that seem to be besting the United States when it comes to the skills of the respective work forces. The two basic concepts inherent in these groups' concerns are–

- **performance measures**–instruments or other operational indicators used to ascertain the extent, dimensions, quality, quantity, or other performance-related attributes or characteristics of some entity (a person or group of people)

- **standard**–a specified level on a particular measure (either at a single point in time–*benchmark*–or over a period of time–*value added*), that is deemed "acceptable" for some purpose.

With regard to the concept of *standards*, Meisenheimer (1992) has noted that, generally speaking, they are predetermined, established by some authority, and communicated to/accepted by the individuals affected by them. In addition, since standards are used as a measurement tool, it is imperative that they be both measurable and achievable. Perhaps more important, standards relate to structures, processes, and/or outcomes of a system, whether it be a health care organization's scope of service or the services of an educational delivery system. Thus, there are three types of standards related to the educational system that need to be addressed in order to reform or improve that system. Those three types of standards are as follows:

1. **Structural Standards**, which "identify the type, number, and characteristics of the resources (labor force and technology) of an organization" (Meisenheimer 1992, p. 520), and are often defined by external regulatory and/or accreditation agencies, professional organizations, oversight agency, and so on.

2. **Process Standards,** which identify activities that should or should not be (are or are not) done by the "practitioners" (administrators, teachers, volunteers) in an organization or system.

3. **Performance or Outcome Standards,** which identify the results, both intended and unintended, upon those being served that evolve from the performance or nonperformance of an activity or service by the organization or system.

The Call for Performance Measures and Standards

When the current federal vocational legislation–the Carl D. Perkins Vocational and Applied Technology Education Act–was being written, performance standards were incorporated into that important piece of legislation. At that point, it was assumed that performance standards and–

> the use of performance-based management principles in the public sector with an emphasis on program outcomes or the 'bottom line,' reflects in part a belief that outcome testing will improve the accountability, management, cost effectiveness, and ultimate performance of public programs. (Apling 1989, p. CRS-4)

This analysis by the Congressional Research Service and another study by the Office of Technology Assessment (1989) concluded that there are indicators of the outcomes of vocational education programs that could serve as the basis for related performance standards.

In a related vein, the Perkins Act (Sec. 416) also authorizes funding for business-labor-education technical committees that are charged with responsibility for proposing national competencies as performance standards for industries and trades. Other federal legislation, most notably that authorizing JTPA, has for almost a decade included a requirement for performance standards. Several other bills pending in Congress propose national standards for occupational certification to be developed by federally appointed boards representative of the industries and occupations that will be governed by those standards. Generally, these initiatives have dealt with performance standards as the key element in an accountability system. Regarding the Perkins Act, this emphasis on performance standards as an accountability tool at the state and local levels has been amplified by Hoachlander (1990, 1991).

In contrast to the view of measures and standards as an accountability vehicle, a second view sees them as a tool for guiding program improvement whose value rests on the degree to which they can facilitate such improvement. Under this view it is essential that a direct link be established between key program design, development, and implementation features and attainment of a standard. If such a link is not made, the standard may yield interesting information, but be of little, if any, value to the program in question. This view of performance standards as a quality improvement tool is rooted in the work of Deming, Juran, Crosby, Ishikawa, and others that is part of the industry/business Total Quality Management (TQM) model (Caroselli 1991; Seymour 1989; Walton 1986). That model is currently being applied in a variety of education, social, and service institutions where improvement is sought in the quality of the services provided (Melvin 1991; Sherr and Lozier 1991; Spanbauer and Hillman 1987).

Under the perspective that systems of performance standards and measures are a quality improvement tool–

> standards are not static or permanent but rather in a constant state of transition. They are continually modified by changes in values, advances in science and technology, and alteration in the policies and regulations of governmental, institutional, and regulatory agencies. Perhaps the ultimate function of standards is to reflect progressively higher levels of acceptable achievement, thus ensuring continual refinement of the concept, process, or service/product under consideration. (Meisenheimer 1992, p. 47)

Operationally, this second view of the role of performance measures and standards regards excellence as an evolving phenomenon that is helical in nature, and measures/standards represent one mechanism or means for facilitating attainment of excellence. Figure 4 reflects this perspective.

The Measures/Standards Raised in America 2000

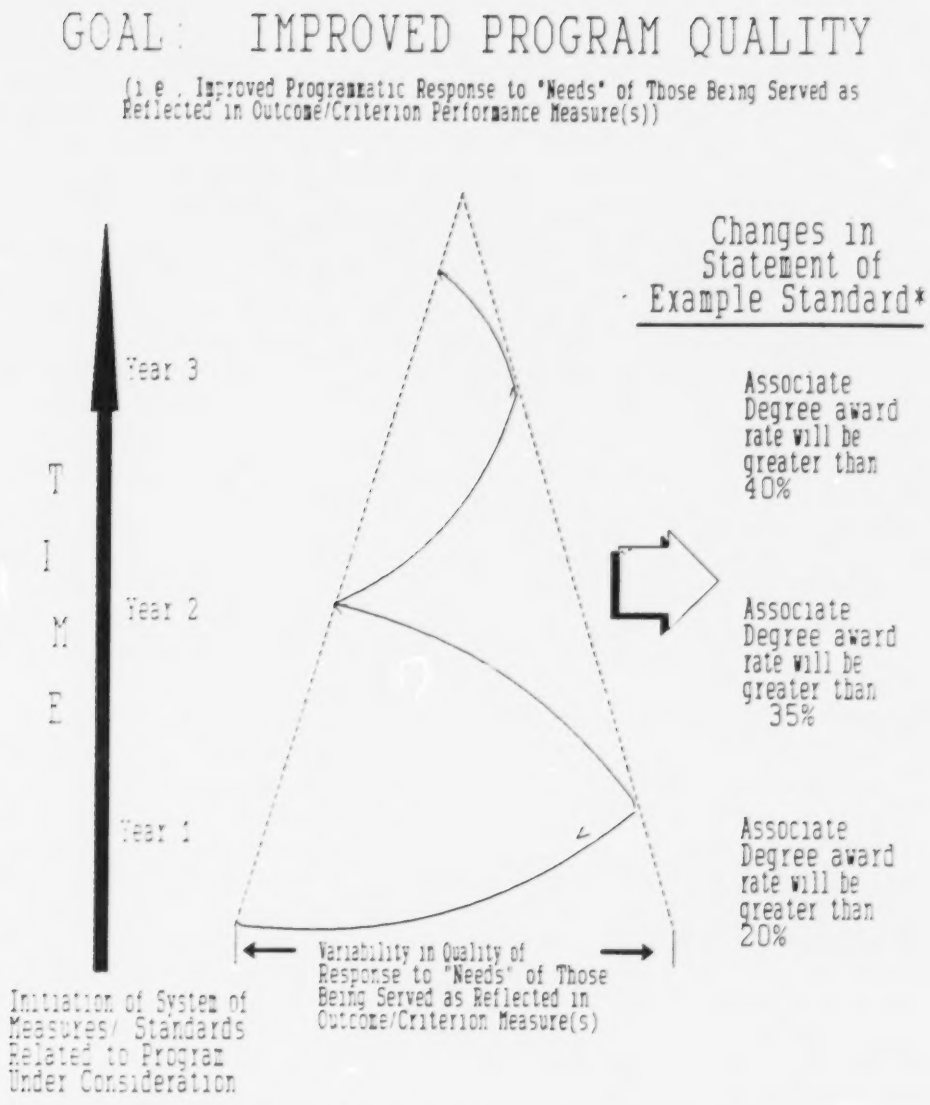
As indicated, America 2000 contains a number of direct calls for the development and use of performance measures and standards. An overview of those measures/standards is provided in Table 4. In that table, the specific measures and standards identified are tied to the four major parts or tracks that define the proposed strategy and to the National Education Goals emphasized within those tracks.

The information summarized in Table 4 suggests that a great deal more work needs to be completed as America 2000 is implemented, particularly because it does not even touch upon the numerous concerns one could raise regarding more basic, programmatic issues related to the proposed strategy. Furthermore, a number of critical voids in definitions and details need to be filled. At the same time it sketches out the key areas where additional measures will need to be developed or at least identified (for example, adult literacy will be measured via the 12th-grade versions of the American Achievement Tests). Given the information in Table 4, one might argue that if the goals of America 2000 are to be *documented* by the year 2000 all $150+ million to be contributed by private industry to "jump start" the overall effort may well need to be spent on the development of the measures alluded to and the collection of the associated data, that is, from *all* adults; *all* students in grades 4, 8, and 12; and *every* school. For that matter, just the costs for development of the new American Achievement Tests and their application could exceed the amount noted. Where would the resources needed to implement the R & D teams come from if this were the case?

The Measures/Standards Noted in the Three National Work Force Preparation Reports

Each of the three reports dealing with the preparation of the nation's work force that were described earlier (see Table 3) also call for the establishment of sets of performance measures and standards. A summary listing of the various measures/standards with which they are concerned is provided in Table 5. A review of the table suggests that–

- most of the measures/standards posed, particularly those that are the most developed/explicit, cover areas of



* The standard noted (taken from Hoachlander 1990) is only illustrative. The "measure" employed in that standard is AA award rate = (number of students with no previous degree who earn an A.A. Degree within 4 years of entering a postsecondary institution)/ (Number of students with no previous degree entering institution 4 years ago).

Figure 4. Role of performance standards in program improvement

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TABLE 4

MEASURES/STANDARDS CALLED FOR IN AMERICA 2000

TRACK	RELATED GOAL EMPHASIS	MEASURE(S)	STANDARD(S)
I. For Today's Students	#2	- Graduation rate (which is not operationally defined)	- Graduation rate will be *at least 90 percent*
	#3	- American Achievement Tests for grades 4, 8, and 12	- Demonstrated competency in 5 core areas when leaving 4th, 8th, and 12th grades will be tied to *World Class Standards*, which are to be developed by the National Education Goals Panel
		- National Assessment of Educational Progress (NAEP) examinations in grades 4, 8, and 12	- No specific standard noted (but presumed to be something comparable to that for the American Achievement Tests)
	#4	- No specific measures noted (but presumed to be either NAEP or American Achievement Tests in math and science)	- U.S. students' achievement levels will be *first* in the world
II. For Tomorrow's Students	All 6	- Presumed to be same as for Track I	- Presumed to be same as for Track I
III. For the Rest of Us	#5	- Literacy (not operationally defined) - Basic and technical core, job-related (and industry-specific) proficiencies—knowledge and skills (not operationally defined)	- *All* adults will be literate - *All* adults will possess the knowledge/skills needed to compete in a global economy and to exercise their rights/responsibilities of citizenship
IV. Communities Where Learning Can Happen	#1	- Ready to learn (not operationally defined)	- *All* American children will start school "ready to learn"
		- Free of drugs and violence (not operationally defined)	- *Every* school will be free of drugs and violence
		- A disciplined environment conducive to learning	- *Every* school will offer a disciplined environment conducive to learning

TABLE 5

MEASURES/STANDARDS CALLED FOR IN THE THREE NATIONAL WORK FORCE PREPARATION REPORTS

SOURCE	AREA IN WHICH RAISED	MEASURE	STANDARD
• Investing in People	- Most of the 44 recommendations	- Most recommendations contain a potential measure or measures, but they would have to be derived—they are not explicitly stated[1]	- No specific standards stated (although the skill levels needed to function in a "high production environment" are alluded on several occasions)
	- Recommendation #9	- Voluntary achievement tasks that assess students' proficiency in a wide variety of academic and vocational areas (not operationally defined)	- Nothing stated
	- Recommendation #20	- Specific occupational tests of job skills and competencies (not operationally defined)	- Nothing stated
	- Recommendation #34	- Nothing specific noted	- Performance standards similar to those for JTPA would be established for the employment service
• America's Choice	- Recommendation #1	- A "series of performance-based assessments" of the "basic skills" necessary for high-productivity employment," including a demonstrated ability to read, write, and compute at world-class standards in general school subjects (math, physical and natural sciences, technology, geography, politics, economics, and English) as well as a capacity to learn, think, work effectively alone and in groups and solve problems; which should be, if possible, "passed" by age 16	- Skill levels on the "performance-based assessments" would be established nationally and bench-marked to the highest in the world; but no specific performance level is provided—they would be set by an independent national examining organization

[1] As an example, if the recommendation were "7. High school students who excel in science and mathematics should be rewarded with business internships or grants for further study," an associated measure might be "the number of high school students who earned As in both science and math who received a business internship or grant for further study."

TABLE 5–Continued

SOURCE	AREA IN WHICH RAISED	MEASURE	STANDARD
	- Recommendation #2	- Essentially the same as #1–referred to in a composite sense as a "Certificate of Initial Mastery"	- Each state should ensure that basically *all students* achieve a Certificate of Initial Mastery
	- Recommendation #3	- A system of industry-based skill certifications by occupational areas ("that build upon existing certification procedures where they exist")	- Each certification measure would be based on an "internationally competitive standard" established by a National Board of Professional and Technical Standards—no specific levels were noted, however
	- Recommendation #4	- Specific amount paid for each worker by an employer for purposes of sending that worker through certified education and training programs	- "Employers would be requested to spend approximately 1 percent of payroll on education and training (with the amount increasing progressively over the decade)"
• What Work Requires of Schools	- Conclusion #1	- Foundation skills demonstrated at grades 4, 8, and 12 via the (voluntary) American Achievement Tests to be developed as part of America 2000	- Demonstrated competency in three grades that will be tied to *World Class Standards*, which have not yet been defined
		- "Effective assessment techniques" to establish students' proficiency levels at grades 8 and 12 on each of the 5 workplace-related competencies—Resources, Interpersonal, Information, Systems, and Technology	- *All* students will be expected to demonstrate a "work-ready" proficiency level on the SCANS competency assessments, where "work-ready" is the second level of proficiency on a 5-level scale—(1) Preparatory, (2) Work-Ready, (3) Intermediate, (4) Advanced, and (5) Specialist
	- Conclusion #2	- Same as for Conclusion #1, but for adult learners	- Basically the same as those noted for Conclusion #1, but for adults (today's worker)

general education or basic skills as contrasted with specific workplace skills–with the notable exception of the five general workplace-related SCANS competencies;

- there are numerous major voids evident across the overall set of measures/standards posed, which suggests that a considerable amount of additional development work needs to be completed; and
- the terminology and approaches employed in the three reports vary significantly, with one report using stan-

dards as synonymous with measures and another, ***Investing in People***, suggesting a wide array of potential measures and possible standards, but using a format that did not directly yield explicit statements of either.

In addition, none of the papers mentions the occupational skills currently being taught in secondary and postsecondary institutions, or even JTPA, and the measures (for example, Student Occupational Competency Achievement Tests–SOCATs) being used to assess competence in those skill areas–other than to say that the current "test burden" is great and the associated multiple-choice tests do not adequately assess the needed competencies. Another concern with the work-related measures/standards posed is that they are basically silent (except for a secondary referral in ***America's Choice***) regarding the work on industry-based measures/standards that has been undertaken and is still emerging (Center for Remediation Design 1991). The cross-referencing of materials and issues from that area of inquiry might have served as at least a starting point for the various commissions' proposals. In a related vein, the measures/standards mentioned do not appear to consider, let alone incorporate, the systems of measures/standards dealing with the technical/occupational skills development of beginning workers that are called for by the Perkins Act and are being implemented by every state in the nation.

Those statewide systems were to be implemented during the 1992-93 school year and were to be applied to all vocational and applied technology programs, at the secondary and postsecondary/adult levels, assisted under the act. Furthermore, each such system of measures/standards was to include the following:

1. measures of learning and competency gains, including student progress in the achievement of basic and more advanced academic skills;

2. one or more measures of performance, which shall include only–

   a. competency attainment;
   b. job or work skill attainment or enhancement including student progress in achieving occupational skills necessary to obtain employment in the field for which the student has been prepared, including occupational skills in the industry the student is preparing to enter;
   c. retention in school or completion of secondary school or its equivalent; and
   d. placement into additional training or education, military service, or employment.

3. incentives or adjustments that are–

   a. for each student, consistent with the student's individualized education program developed under section 614(a)(5) of the Education of the Handicapped Act, where appropriate; and

4. procedures for using existing resources and methods developed in other programs receiving federal assistance (Vocational-Technical Education Consortium of States n.d., p. 2)

In summary, although each of the three reports refers to and/or employs the terminology of performance measures/standards, they have unevenly applied these concepts, at least as they were defined earlier, and could have been much more directed had they been consistent and focused in their use of those concepts. In addition, their efforts in this regard could

have been aided considerably if they had built more upon the substantial base of experience that already exists in the vocational education/training field (Giroux 1992; William T. Grant Foundation 1991).

To some extent, it appears the commissions that authored the three reports were willing to ignore or bypass the nation's established vocational education delivery system, which represents an in-place, experienced, and extremely valuable asset. This apparent omission may reflect an unintended oversight or what on occasion could be described as divisive and wasteful differences in the attitudes held by the U.S. Department of Labor (which sponsored the three commissions) and the U.S. Department of Education. In either case, a perceived lack of significant involvement and the omission of inputs from members of the vocational education community are unfortunate. For example, the experience of vocational educators at the local level suggests that getting business/industry to become integrally involved in an active, sustained manner in schools and schooling is quite difficult to achieve and simply saying it needs to occur as called for in all three reports, particularly at the levels noted, is not likely just to happen. "Where is the profit in it for them?" (Molnar 1990).

TQM AND ITS REFLECTION IN AMERICA 2000 AND THE THREE WORK FORCE PREPARATION STRATEGIES

As alluded to in the previous section, the view that performance measures and related standards are a basic quality improvement tool is rooted in the work of such notable advocates of TQM as Deming, Juran, and Crosby. Although TQM is not specifically mentioned in America 2000 or any of the three work force preparation strategies being reviewed, they do refer on occasion to a number of the basic concepts evolving from that movement, other than just performance measures and standards. For example, in several of the reports reference is made to the need for the schools (and businesses) of the future to be "high performance organizations," which is a key concept under TQM. In its follow-up report, SCANS (1992) makes direct reference to "Deming's 14 Points toward Quality" (p. 18).

TQM or Total Quality Management is a movement in business circles that was initiated by W. Edwards Deming over 4 decades ago as a method to be used by business/industry to improve production processes. Since its introduction by Deming to the Japanese, the basic method has been adapted and improved, and it has been expanded to many service-oriented enterprises, including education (Seymour 1989). According to Garvin (1988) there have been four major eras in the evolution of "quality improvement" efforts and TQM, or "Strategic Quality Management" as he refers to it, is the most recent. The general path that evolution has taken is from *Inspection* (pre-1930s) to *Statistical Quality Control* (1930s-1950s) to *Quality Assurance* (1950s-1980s) to *Strategic Quality Management* (1980s-present).

Although Garvin views TQM as a logical, sequential extension of earlier quality improvement initiatives/efforts, other practitioners have viewed it in a somewhat different, more pragmatic fashion. For example, Boeing Aerospace Company (1987), which refers to it as "Quality Improvement," casts it as one of three general approaches available to business to increase productivity. (See Table 6.) For Boeing, "quality improvement addresses the way that work is accomplished; it optimizes processes within the company. It places all work processes, including those in the white-collar environment, under the microscope and targets them for improvement" (p. 3). Several of the processes in education, particularly higher education, that have been placed under the "microscope" are exemplified by the work undertaken at Oregon State University (Coate 1990). (See Exhibit 5.) A review of this exhibit, coupled with the results of several surveys of institutions of higher education (Coate 1990; Seymour 1989; Seymour and Collett 1991), suggests that few processes within higher education institutions have not been placed under the TQM "microscope," not just once, but across many institutions.

One of the concerns with TQM on campus raised by Seymour and Collett (1991) is "the lack of widespread academic improvement efforts" (p. 13). Furthermore, few such efforts involving elementary and secondary (including vocational-technical)

TABLE 6

BOEING'S THREE APPROACHES TO PRODUCTIVITY

KEY CHARACTERISTICS	NAMES OF APPROACHES: (1) Exhortation	(2) Objectives	(3) Quality Improvement
• Elements that Characterize the Approach	- Posters and buttons - Programs that come and go - Usually aimed at management	- Focused on a few easily measured variables - Usually aimed at management	- Processes identified and owned - Waste measured - Data gathered to identify causes - Changes made in the way work is performed
• Operating Assumptions	- People need to be encouraged	- People need to have goals	- People need to work in partnership and want to do their best
• Means of Accomplishment	- Media	- Competition	- Knowledge and understanding, training and learning for everyone in the organization
• Pitfalls to Avoid	- Hypocrisy	- Fear and increased waste elsewhere	- Structure without improvement

SOURCE: Boeing Aerospace Company. *Total Quality Improvement: A Resource Guide to Management Involvement*. Seattle, WA: Quality Improvement Center, Boeing Aerospace Company, 1987, p. 2. Reprinted by permission.

EXHIBIT 5

OREGON STATE UNIVERSITY'S 12 CRITICAL PROCESSES

PROCESS	RELATED PERFORMANCE MEASURE
1. Enrollment Management	- Concordance with Enrollment Management Plan
2. Curriculum Development	- Peer acceptance
3. Teaching	- Student teaching evaluation
4. International Development	- Number of students going overseas
5. Research	- Number of publications
6. Service Delivery (Extension)	- % of community participation
7. Community Relations	- Number of complaints
8. Information Services	- Computer–student ratio
9. Long-Range Planning	- % objectives met
10. Work Force Hiring and Development	- % first choice hires
11. Facilities Development	- % of value to money for repairs
12. Funding Development	- $ obtained/$ requested

SOURCE: Coate, L. E. "Implementing Total Quality Management in a University Setting." Corvallis: Oregon State University, 1990, p. 13. Reprinted by permission.

institutions have been reported, to date. Perhaps one of the objectives of a research initiative supported by the U.S. Department of Education might be to identify institutions at all three levels of education–elementary, secondary, and postsecondary–that could and should apply for the Malcolm Baldridge National Quality Award (U.S. Department of Commerce 1991) or perhaps a parallel award for educational institutions that is based upon comparable criteria/standards.

From among the many strands of thought, variant perspectives, and diverse experiences that serve to define the current gestalt regarding TQM, Marchese (1991) has identified 12 core themes:

1. **Focused on Quality**. Quality, although viewed somewhat differently by different organizations, is the defining characteristic of a TQM-oriented organization. It is not just an attribute of products or services; it is a mindset, the "soul" of the organization.

2. **Customer Driven**. The organization identifies explicitly who its customers are, works to know their needs, and makes a commitment to meeting those needs. The primacy of the link between quality and the customer has been noted by Deming–"quality" is that which "surpasses customer needs and expectations." It is also essential to remember that an organization, such as an educational institution, has multiple "customers." Some of the major groupings of customers were identified by one institution, Oregon State University (Coate 1990). (See figure 5.) Both secondary and elementary schools and school districts will have comparable arrays of customers whom they must come to know better if they are to become "high performance organizations" as defined under the TQM perspective.

3. **Continuous Improvement**. This characteristic is seen as a "journey" that is an integral part of every job in the organization. According to David Kearns, former Xerox CEO and Undersecretary of Education with the Bush Administration, "in the race for quality, there is no finish line."

4. **Make Processes Work Better**. Every organization is an array, if not a network of processes, where a process is defined as "a series of ordered steps to a desired outcome; activities that act upon an 'input' from a 'supplier' to produce an 'output' for a 'customer'; the whole or totality of a service–the outcomes, activities, continuity, resources and population dimensions of the service" (Meisenheimer 1992, p. 517). There are very complex processes that involve many people (for example, registration or preparing the accreditation self-study for a college) and very simple processes (for example, signing a drop-add slip for an advisee or "posting" one's grades with the Registrar's Office). In a TQM-oriented organization, the "aim is to identify those processes; enable the people who work in them to understand that work in relation to customer needs (Are we doing the right thing? How well?); and set in motion, through problem-solving teams, process improvements" (Marchese 1991, p. 5).

   In most organizations the key processes to be considered are identified by addressing such questions as: What do we do as an (educational) organization–what are our "products," customers, and so on? and How do we do what we do? Generally, the responses to such questions lead to the identification of two types of processes–

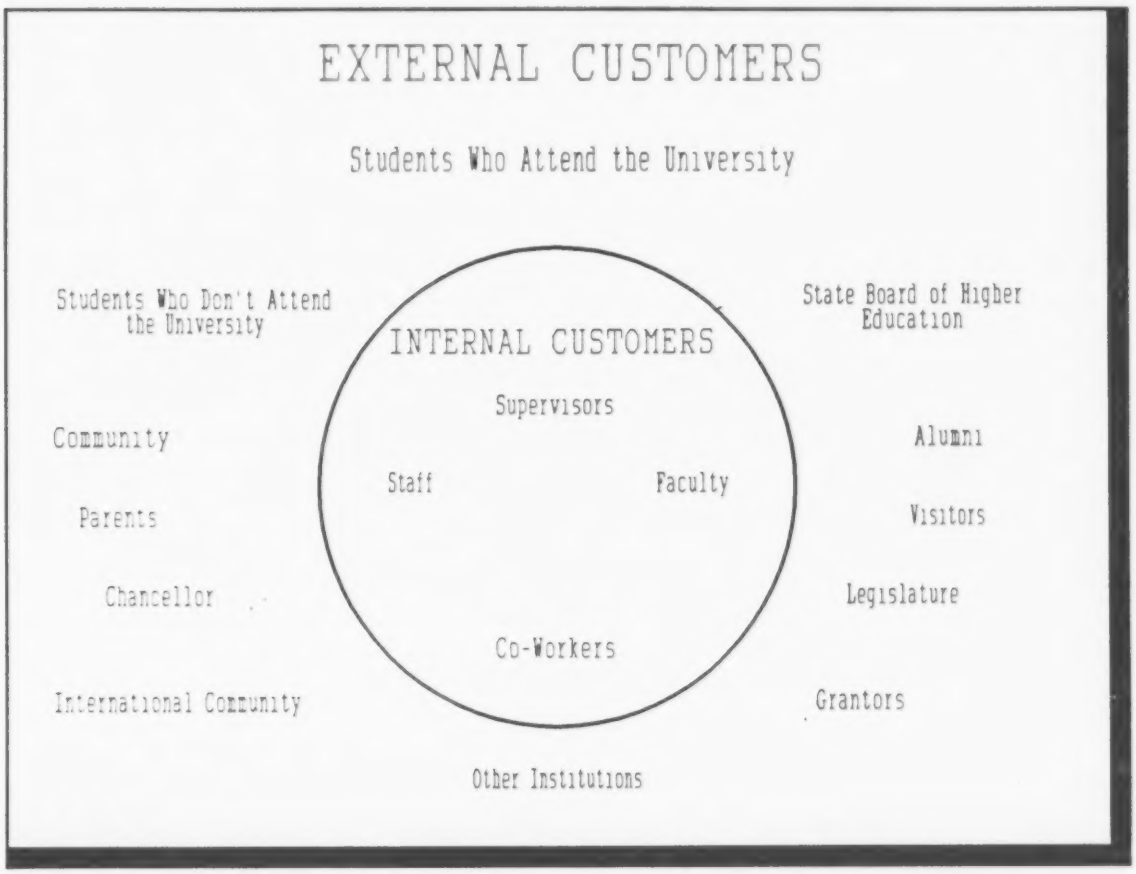

Figure 5. Major customers identified by an institution of higher education

SOURCE: Coate, L. E. "Implementing Total Quality Management in a University Setting." Corvallis: Oregon State University, 1990, p. 11. Reprinted by permission.

- **Vertically aligned processes**, which are organized along functional lines, and generally receive their inputs from and generate output within a single administrative and/or organizational unit. Such processes generally are the simpler processes to deal with and are often subprocesses within more complex macroprocesses.

- **Cross-functional processes**, which flow horizontally across several units or functions of the organization and usually no single individual or office is responsible for them in their totality. Typically, such processes are complex macroprocesses.

In some business/industry settings, process identification is accomplished via both a top-down and a complimentary bottom-up approach.

Once the array of processes that characterize an organization has been identified, the next step involves selecting the critical processes for improvement–generally 10-25 or few-

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er, depending on the complexity of the processes and available resources. To help make such selections, Harrington (1991) suggests rating each process identified in terms of its *customer impact* (Low, Medium, High) and its *improvement opportunity* (Low, Medium, High), then prioritizing the set of processes using the following scale:

PRIORITY SCALE	RATINGS: Customer Impact–Improvement Opportunity
Top	High–High
High	High–Medium, Medium–Medium, or Medium–High
Medium	High–Low, Medium–Low, Low–Medium, Low–High
Low	Low–Low

The first element in each pair of ratings listed is for **Customer Impact** and the second is for **Improvement Opportunity** (which may be based on estimates of such factors as cycle time, rework requirements, or costs). The processes denoted as being of the highest priority would represent the foci of the organization's quality improvement efforts.

5. **Extend the Mindset.** In the past, attention to quality has focused on the "shop floor"; it was a matter to be "controlled" or inspected in" (Garvin 1988). Under TQM, quality starts at the process and product design phase and extends backward from the shop floor–to the suppliers as well as forward–out the door where the quality of one's goods/services is judged in terms of Deming's criterion, that is, how well they meet or exceed customers' expectations and/or needs in actual use.

6. **Discipline of Information.** In a TQM environment, data are critical: everybody has to know how they are doing–on a continuing basis–and measurement is the means for fulfilling the critical information needs of a "knowledge-driven organization." This need is the impetus for focusing on performance measures and standards such as those noted earlier in relation to America 2000 and the three work force preparation strategies under review. Information is also critical in informing planning decisions during the early stages of TQM implementation.

7. **Eliminate Rework.** One aim of TQM is to improve work processes so as to alleviate "scrap, waste, and complexity" (Deming) from those processes and to get things right the first time. It has been estimated that 20 percent of all costs in the business/industrial sector and 35 percent of the operating costs in the service sector are spent on work that has to be done over (rework) or thrown out (scrap), not to mention the additional steps that have to be completed but add no value to a product or service.

8. **Emphasize Teamwork.** TQM emphasizes teams and teamwork with all persons sharing responsibility for the processes, both vertically aligned/simple and cross-functional, they work in and for the whole. Marchese (1991) notes that these teams are *not* committees with which people in education are so familiar, but are "self-directed work groups" that bring

together most of the people who work in a process to work on its improvement. This emphasis on workers working in teams rather than in isolation has been supported by research and development efforts focused on fostering cooperative learning (Slavin 1983; Slavin and Madden 1991).

9. **Empowerment of People.** The results reported by one TQM advocate, Juran, indicated that, in most systems (sets of processes), 80-85 percent of the problems can be traced to the system itself and 15-20 percent to the workers in that system (Tribus 1991). Furthermore, it is argued that workers want to do the right and best thing, and the role of managers is to remove the system-related barriers that prevent them from doing so. In this vein under TQM "the manager understands that he [sic] needs the workers not only to do the work, but to help him improve the system. Thus, he will not regard them simply as robots made of flesh and bone, but he will rather consider them as thinking creative human beings" (Tribus 1991, p. 4). The workers are essential in understanding and hence, improving, what is happening at the place where the work gets done.

10. **Training and Recognition.** As indicated in theme 9, workers under the TQM approach are viewed as thinking, creative human beings. In order to help employees understand the organization's perspective regarding quality, have the skills needed to engage in teamwork and problem solving, and relate more effectively to customers, TQM-related organizations invest heavily in employee training and human resource development at all levels. This approach, particularly with its emphasis on the training of all levels of employee differs significantly from the approach used in the past, which focused training in the professional and white-collar ranks (Carnevale and Gainer 1989). TQM-oriented institutions also tend to rely less on individual rewards and incentives and more on team-oriented "recognition, honors, and celebration."

11. **Vision.** In a TQM-oriented organization there is a continuing press to develop a plain-English statement of its core values and an effort to have those values be a clear part of each employee's work and to keep them focused on the "right things." Generally, these "vision statements" reflect a longer-term view and commitment to the values in question than has traditionally occurred in U.S. business/industry.

12. **Leadership.** Leadership under the TQM perspective differs significantly from that which has characterized business and industry in the past (see Exhibit 6). With the emphasis on improving processes (and products/services) rather than just producing short-term results, managers are seen as taking on more of a coaching role and supporting employees in their efforts to improve the processes in which they work.

Given the number of referrals to different TQM-related concepts, issues, and processes in America 2000 as well as the three national work force preparation reports, it seems appropriate to reflect the recommendations/conclusions and strategies raised in those documents against the backdrop afforded by Marchese's 12 themes. The materials in the following section describe a somewhat limited reflective effort.

EXHIBIT 6

A COMPARISON OF TQM-ORIENTED AND TRADITIONAL MANAGEMENT STYLES

TQM STYLE	TRADITIONAL STYLE
• Participative	• Authoritarian
• Open discussions	• Fear of knowledge
• Job security	• Fear of job loss
• Continuous quality improvement	• Maintenance of status quo
• Policies that encourage and support employees in the quest for continuous improvement	• Establishment of policies, systems and procedures that are rigid, extensive, constraining
• Work with suppliers via an extended "field of vision" or mindset	• "Beat on" suppliers–strive for minimum cost
• Close to customers and their needs	• Distant from market
• All people (employees) trained in the basic tools of TQM	• Specialists in statistics, industrial engineering, etc.
• Works on causes of problems	• Work on results

SOURCE: Boeing Aerospace Company. ***Total Quality Improvement: A Resource Guide to Management Involvement***. Seattle, WA: Quality Improvement Center, Boeing Aerospace Company, 1987, p. 5. Reprinted by permission.

The Perceived Use of TQM in Developing the Work Force Preparation Recommendations

As noted earlier, each of the four major strategies that has been proposed for reforming the education/training of the nation's work force–***America 2000***, ***Investing in People***, ***America's Choice***, and ***What Work Requires of Schools***–incorporates terms and proposals that reflect, in part, the TQM approach. The question posed at this point is this: If the indicated strategies use terminology from TQM and imply that they would emulate that approach, how do they "stack up" when it comes to the 12 core themes identified by Marchese?

Overall, a brief look into that issue suggests that none of the four designated reports is intimately tied to the basic tenets underlying TQM. In particular, none of those strategies appears–

- to sample adequately and reflect upon the needs of the array of "customers" (see figure 6) of the institutions/organizations (schools and training institutions as well as business/industry to some extent) that are "to be turned on their heads";
- to seek continuous improvement in quality and/or to offer either a description or prescription for pursuing such a goal;
- either to explicate or analyze, let alone offer contextually sensitive suggestions for improving the critical processes within the nation's education/training

organizations, as described by Boyer (1983), Goodlad (1984), and Weber et al. (1988);

- to empower the people who work in the key processes that operationally define education/training to improve those processes; rather, they appear to circumvent totally those people and simple dictate in very gross terms what they should do–starting with "scrapping" the processes they currently use (many of which have been dictated by law and the associated "regulations" promulgated by those responsible for their implementation) and replacing them with some processes they recommend *but do not operationally define*;

- to consider, let alone address, the issue of "employee" training so as to help them do a high quality job of delivering modified curricula under some modified structure or organization. (Why would they be expected to do a better job in a "process" they are not familiar with than in one they know?);

- to establish a long-term vision related to their respective proposals, particularly in regard to detailing their "contents" and implementation; and

- to establish a leadership role–who will guide the new initiatives and "own" the key processes that define those efforts.

In addition to these specific omissions across the four proposed strategies as viewed from the TQM perspective, several other key points need to be raised:

- Approximately 85 percent of the workers in the year 2000, which is a "target date" for many of the strategies, are already in the work force and, therefore, one might argue that as much as 85 percent of the effort and concern with the future work force should be targeted toward retraining and upgrading the skills of those people, for example, by strengthening adult education and making it easier for them to become students again. *Do the proposed strategies focus on processes that reflect such an emphasis?*

- The key employers in this country are small businesses (Carnevale and Gainer 1989). *Do the proposed strategies account for this fact and do they focus a comparable portion of their attention on the processes used by these employers as well as ways of addressing, if not alleviating, their work force needs?*

- The primary motivation in a "free-market economy" is not philanthropy (Molnar 1990) but continuing, if not "guaranteed," sizable profits on short-term investments. *What do the different strategies propose that will convince business/industry that their profits will continue, if not improve, particularly when most call for employers making larger investments and having greater involvement in education generally, not just education and training targeted toward their specific employees?*

- Many of the recommendations/conclusions offered are presented as though they represent the "national view." *How do they propose to verify and/or convince the nation of the need to adopt their recommendations and what strategies do they incorporate for helping to ensure that this occurs?*

In summary, the four strategies proposed do not reflect strongly the kind of vision and direction called for under TQM. As noted earlier, they each offer one or more recommendations that seemingly have merit, but none of them is adequately developed as an operational strategy (for example, as a unified national policy statement on education/training and work

force preparation) that could be efficiently and effectively implemented. The extent to which the proposed strategies argue for explicating, building upon, and improving existing processes that members of the education/training community "work in" and know, instead of "turning the education/training establishment on its head," is preferable from a TQM perspective. Few, if any educators would argue that the status quo should be maintained, but at the same time, they can hardly be asked to endorse enthusiastically the strategies being proposed, which call for their embarking in unproven and uncharted directions with little or no training in where they are going or how they are to get there.

Instead of the "revolution" in education called for in America 2000, under the TQM approach one might choose to study and evaluate critical aspects of the current "system" in order to identify potential areas or subprocesses to be targeted for change–much like the analysis of the system that defines Deming's "Parable of the Red Beads" (Walton 1986). For example, the results of a number of studies of the *instructional process* employed in public schools (Boyer 1983; Goodlad 1984; Weber, Puleo, and Klinger 1990; and Weber et al. 1988) have clearly and unequivocally shown that *listening* is a fundamental component of that process and represents a "basic skill" (Gloeckner et al. 1992) that students are required to use more than any other. [The work of Semple (1987) also suggests that people spend about 55 percent of their "communication time" every day engaged in listening.] In the studies conducted by Weber et al. (1988, 1990), which involved observations in over 1,150 vocational and nonvocational classrooms across the country, listening was never addressed as an instructional objective, that is, no effort was made to foster, remediate, or evaluate that skill in over 2,300 class periods of observations. Could it be that instructional efficiency and effectiveness might be improved in public school classrooms if students were trained to be "better" listeners and/or teachers were sensitized to the unique needs of different types of listeners? Efforts to implement and evaluate such a "nonrevolutionary" approach based on existing curriculum-related research would seem to be more in keeping with the philosophical and operational tenets underlying TQM, while at the same time that approach would probably be easier to accommodate and accomplish (if shown to have merit) than the "revolutionary" strategies called for in the reviewed reports. *Should the consideration of this substantial discrepancy between use of and training in listening that occurs in the instructional system, which is only one of a number of issues/areas suggested by contemporary, data-based research, not be undertaken before endeavoring totally to revamp the nation's vocational-technical education and training system along the lines being suggested?*

REFERENCES

Items with ED numbers may be ordered from the ERIC Document Reproduction Service, CBIS Federal, 7420 Fullerton Road, Suite 110, Springfield, VA 22153-2852, (800) 443-3742, (703) 440-1400.

Apling, Richard N. *Vocational Education Performance Standards.* Washington, DC: Congressional Research Service, Library of Congress, 1989. (ERIC Document Reproduction Service No. ED 309 320).

Bailey, T. *Changes in the Nature and Structure of Work: Implications for Skill Demand.* Washington, DC: National Assessment of Vocational Education, U.S. Department of Education, 1988.

Bailey, T., and Noyelle, T. *New Technology and Skill Formation: Issues and Hypotheses.* New York: National Center on Education and Employment, Teachers College, Columbia University, 1988. (ERIC Document Reproduction Service No. ED 302 687).

Bennett, W. J. "Address to Annual Convention of the American Vocational Association, Atlanta, Georgia, December 6, 1985." *Career Training* 2, no. 3 (Winter 1986): 27-29.

Berliner, D. C. *Educational Reform in an Era of Disinformation.* Tempe: College of Education, Arizona State University, Feburary 1992. (ERIC Document Reproduction Service No. ED 348 710).

Berman, P.; and others. *Preparing for Idaho's Future.* Boise: The Idaho Education Project, Boise State University, 1991. (ERIC Document Reproduction Service No. ED 336 298).

Berryman, S. E. "Shadows in the Wings." The Next Educational Reform." A paper presented at the New Education Agenda for Business Conference, Washington, DC, February 12, 1987. (ERIC Document Reproduction Service No. ED 292 950).

Boeing Aerospace Company. *TOTAL QUALITY IMPROVEMENT: A Resource Guide to Management Involvement.* Seattle, WA: Quality Improvement Center, Boeing Aerospace Company, 1987.

Boston Regional Office of the U.S. Department of Labor. *Three Strategies . . . One Future: A Crosswalk among Three Proposals Shaping America's Workforce Preparation Policy.* Boston, MA: DOL, 1992. (ERIC Document Reproduction Service No. ED 344 037).

Boyer, E. L. *High School: A Report on Secondary Education in America.* New York: Harper and Row, 1983.

Boyett, J. H., and Conn, H. P. ***Workplace 2000: The Revolution Reshaping American Business***. New York: Penguin, 1991.

Carnevale, A. "Economic Competitiveness and Vocational Education." Paper presented at the National Meeting of the State Directors of Vocational Education, May 1987.

Carnevale, A. P. ***America and the New Economy***. Washington, DC: American Society for Training and Development, 1991. (ERIC Document Reproduction Service No. ED 333 246).

Carnevale, A. P., and Gainer, L. J. ***The Learning Enterprise***. Alexandria, VA: American Society for Training and Development, 1989. (ERIC Document Reproduction Service No. ED 304 581).

Carnevale, A. P.; Gainer, L. J.; and Meltzer, A. ***Workplace Basics: The Skills Employers Want***. Alexandria, VA: American Society for Training and Development, 1988. (ERIC Document Reproduction Service No. ED 299 462).

Carnoy, M.; Shearer, D.; and Rumberger, R. ***A New Social Contract***. New York: Harper and Row, 1983.

Caroselli, M. ***Total Quality Transformations: Optimizing Missions, Methods and Management***. Amherst, MA: Human Resource Development Press, 1991.

Carson, C. C.; Huelskamp, R. M.; and Woodall, T. D. ***Perspectives on Education in America, Annotated Briefing–Third Draft***. Albuquerque, NM: Systems Analysis Department, Sandia National Laboratories, 1991.

Center for Remediation Design. ***Developing Industry-Based Skill Standards***. Washington, DC: CRD, 1991. (ERIC Document Reproduction Service No. ED 337 626).

Coate, L. E. "Implementing Total Quality Management in a University Setting." Corvallis: Oregon State University, 1990.

Commission on the Skills of the American Workforce. ***America's Choice: High Skills or Low Wages!*** Rochester, NY: National Center on Education and the Economy, 1990. (ERIC Document Reproduction Service No. ED 323 297).

Commission on Workforce Quality and Labor Market Efficiency. ***Investing in People: A Strategy to Address America's Workforce Crisis***. Washington DC: U.S. Department of Labor, 1989. (ERIC Document Reproduction Service No. ED 307 506).

Copa, G. H. ***A Framework for the Subject Matter of Vocational Education***. Berkeley: National Center for Research in Vocational Education, University of California, May 1992. (ERIC Document Reproduction Service No. ED 345 106).

Cross, K. P. "The Rising Tide of School Reform Reports." ***Phi Delta Kappan*** 66, no. 3 (November 1984): 167-172. (ERIC No. EJ 309 942).

Edgerton, R. "National Standards Are Coming! . . . National Standards Are Coming!" *AAHE Bulletin* 44, no. 4 (December 1991).

Education Commission of the States. ***Action for Excellence: A Comprehensive Plan to Improve Our Nation's Schools***. Denver, CO: Task Force on Education for Economic Growth, Education Commission of the States, 1983. (ERIC Document Reproduction Service No. ED 235 588).

Eguez, J.; Huie, C.; and Rickard, P. ***Employability Competency System: Final Report***. San Diego, CA: Comprehensive Adult Student Assessment System, January 1991. (ERIC Document Reproduction Service No. ED 337 656).

Ferguson, M. ***The Aquarian Conspiracy: Personal and Social Transformations in the 1980s***. Boston: Houghton Mifflin, 1980.

Finn, C. E. "A Fresh Option for the Non-College Bound." ***Phi Delta Kappan*** 68, no. 4 (November 1986): 234-238. (ERIC No. EJ 343 781).

Ganzglass, E., and Heidkamp, M. ***State Strategies to Train a Competitive Workforce: The Emerging Role of State-Funded Job Training Programs***. Washington, DC: Center for Policy Research, National Governors' Association, 1987. (ERIC Document Reproduction Service No. ED 320 008).

Garvin, D. A. ***Managing Quality: The Strategic and Competitive Edge***. New York: Free Press, 1988.

Giroux, H. A. "Educational Leadership and the Crisis of Democratic Goverment." *Educational Researcher* 21, no. 4 (May 1992): 4-11. (ERIC No. EJ 448 065).

Gloeckner, G.; Cobb, B.; Love, C.; and Grant, B. ***Integrating Basic Skills into Vocational Teacher Education Curricula: Review of Literature***. Ft. Collins: Colorado State University, 1992.

Gold, L. N., and others. ***States and Communities on the Move: Policy Initiatives to Build a World-Class Workforce***. Washington, DC: Commission on Work, Family and Citizenship, William T. Grant Foundation, 1991. (ERIC Document Reproduction Service No. ED 339 875).

Goodlad, J. J. ***A Place Called School: Prospects for the Future***. New York: McGraw-Hill, 1984.

Goodman, P. S. ***Assessing Organizational Change: The Rushton Quality of Work Experiment***. New York: Wiley, 1979.

Governor's Advisory Council on Literacy. ***Jobs without People: The Coming Crisis for Missouri's Workforce***. Jefferson City, MO: Governor's Advisory Council on Literacy, 1989. (ERIC Document Reproduction Service No. ED 319 952).

Hall, R. "The Importance of Lifetime Jobs in the U.S. Economy." *American Economic Review* 72, no. 1 (September 1982): 716-754.

Harrington, H. J. ***Business Process Improvement: The Breakthrough Strategy for Total Quality, Productivity, and Competitiveness.*** New York: McGraw-Hill, 1991.

Henry, J. F., and Raymond, S. ***Basic Skills in the U.S. Work Force: The Contrasting Perceptions of Business, Labor, and Public Education.*** New York: Center for Public Resources, 1982.

Hoachlander, E. G. "Systems of Performance Standards and Accountability for Vocational Education." Paper presented at the Fall Leadership Conference of the National Association of State Directors of Vocational Technical Education Consortium, Seattle, Washington, September 1990. (ERIC Document Reproduction Service No. ED 328 762).

Hoachlander, E. G. "Designing a Plan to Measure Vocational Education Results." *Vocational Education Journal* 66, no. 2 (February 1991): 20-21, 65. (ERIC No. EJ 420 873).

Hunter, J. ***Validity Generalization for 12,000 Jobs: An Application of Synthetic Validity and Validity Generalization to the General Aptitude Test Battery (GATB).*** Washington, DC: Employment Service, U.S. Department of Labor, 1980.

Hunter, J., and Hunter, R. ***The Validity and Utility of Alternative Predictors of Job Performance.*** Report submitted to the U.S. Office of Personnel Management, June 1984.

Illinois Council on Vocational Education. ***Toward a World Class Workforce.*** Springfield: ICOVE, 1991. (ERIC Document Reproduction Service No. ED 338 820).

Jobs for the Future, Inc. ***Executive Report of Jobs for Indiana's Future.*** West Somerville, MA: Jobs for the Future, August 1989. (ERIC Document Reproduction Service No. ED 312 447).

Johnston, W. B., and Packer, A. ***Workforce 2000: Work and Workers for the 21st Century.*** Indianapolis, IN: Hudson Institute, 1987. (ERIC Document Reproduction Service No. ED 290 887).

Kadamus, J. A., and Daggett, W. R. ***New Directions for Vocational Education at the Secondary Level. Information Series no. 311.*** Columbus: ERIC Clearinghouse on Adult, Career, and Vocational Education, The National Center for Research in Vocational Education, The Ohio State University, 1986. (ERIC Document Reproduction Service No. ED 272 771).

Kaplan, G. R. ***Items for an Agenda–Educational Research and the Reports on Excellence.*** Washington, DC: American Educational Research Association, 1985. (ERIC Document Reproduction Service No. ED 273 566).

Kolberg, W. H., and Smith, F. C. *Rebuilding America's Workforce*. Homewood, IL: Business One Irwin, 1992.

Marchese, T. "TQM Reaches the Academy." *AAHE Bulletin* 44, no. 3 (November 1991): 3-9. (ERIC Document Reproduction Service No. ED 340 271).

Meisenheimer, C. G. *IMPROVING QUALITY: A Guide to Effective Programs*. Gaithersburg, MD: Aspen Publishers, 1992.

Melvin, Charles A., III. "Translating Deming's 14 Points for Education." *School Administrator* 48, no. 9 (November 1991): 19-20, 23. (ERIC No. EJ 434 406).

Mikulecky, L., and Ehlinger, J. "The Influence of Metacognitive Aspects of Literacy on Job Performance of Electronics Technicians." Paper presented at the International Reading Association Convention, Anaheim, California, May 5, 1986. (ERIC Document Reproduction Service No. ED 266 435).

Mikulecky, L., and Winchester, D. "Job Literacy and Job Performance among Nurses at Varying Employment Levels." *Adult Education Quarterly* 34, no. 1 (Fall 1983): 1-15. (ERIC No. EJ 285 007).

Mills, T. *Quality of Work Life: What's in a Name*? Detroit: General Motors Corporation, 1978.

Molnar, A. "NO BUSINESS: An Educator Warns: Beware of Corporations Bearing Gifts for Schools." *Wall Street Journal*, February 9, 1990, p. R32.

Naisbitt, J. *Megatrends: Ten New Directions Transforming Our Lives*. New York: Warner Books, 1982.

National Commission on Excellence in Education. *A Nation At Risk: The Imperative for Educational Reform*. Washington, DC: NCEE, 1983. (ERIC Document Reproduction Service No. ED 226 006).

National Commission on Secondary Vocational Education. *The Unfinished Agenda: The Role of Vocational Education in the High School*. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1984. (ERIC Document Reproduction Service No. ED 251 622).

National Education Goals Panel. *The National Education Goals Report: Building a Nation of Learners*. Washington, DC: NEGP, 1991. (ERIC Document Reproduction Service No. ED 334 280).

National Science Foundation. *Educating Americans for the 21st Century: A Plan of Action for Improving Mathematics, Science and Technology Education for All American Elementary and Secondary Students So that Their Achievement Is the Best in the World by 1995*. Washington, DC: National Science Board Commission on Precollege Education in Mathematics, Science, and Technology, National Science Foundation, 1983. (ERIC Document Reproduction Service No. ED 233 913).

Natriello, G. ***What Do Employers Want in Entry-Level Workers? An Assessment of the Evidence. Trends and Issues #12.*** New York: National Center on Education and Employment, Columbia University, 1989. (ERIC Document Reproduction Service No. ED 308 279).

North Dakota Council on Vocational Education. ***Maximizing Potential: For High-Quality Participation in the New Work Force.*** Bismarck: NDCOVE, July 1989. (ERIC Document Reproduction Service No. ED 311 283).

Noyelle, T. ***Work in a World of High Technology: Problems and Prospects for Economically Disadvantaged Workers.*** Knoxville: Office for Research in High Technology Education, University of Tennessee, 1984. (ERIC Document Reproduction Service No. ED 254 617).

Oakes, J. "Beyond Tinkering: Reconstructing Vocational Education." In ***Re-Visioning Vocational Education in the Secondary School,*** by G. H. Copa and Associates. St. Paul: Minnesota Research and Development Center for Vocational Education, University of Minnesota, 1986. (ERIC Document Reproduction Service No. ED 279 846).

Office of Technology Assessment. ***Performance Standards for Secondary School Vocational Education.*** Washington, DC: OTA, Congress of the United States, 1989. (ERIC Document Reproduction Service No. ED 313 591).

Office of Technology Assessment. ***Worker Training: Competing in the New International Economy.*** Washington, DC: OTA, Congress of the United States, 1990. (ERIC Document Reproduction Service No. ED 326 622).

Ohio Department of Education. ***Ohio's Future at Work.*** Columbus: OH DE, 1990. (ERIC Document Reproduction Service No. ED 323 407).

Ore Ida. "Everything You Want to Know about TQM in a Thirty Minute Overview." A presentation for Idaho Power Company. Boise, ID: Ore Ida Foods, January 10, 1992.

Oregon Department of Education. "Oregon's Educational Act for the 21st Century." Salem: OR DE, 1991.

Oregon Employment Division. ***Is Oregon's Future at Risk? A Profile of Oregon's Youth. . . .*** Salem: Department of Human Resources, Oregon Employment Division, March 1989. (ERIC Document Reproduction Service No. ED 311 200).

Panel on Secondary School Education for the Changing Workplace. ***High Schools and the Changing Workplace: The Employers' View.*** Washington, DC: National Academy Press, 1984. (ERIC Document Reproduction Service No. ED 244 081).

Pennsylvania Economic Development Partnership. ***A State Prepared: Developing Pennsylvania's Work Force.*** Harrisburg: Pennsylvania Economic Development Partnership, 1991.

Pratzner, F. "The Vocational Education Paradigm: Adjustment, Replacement, or Extinction." *Journal of Industrial Teacher Education*, 22, no. 2 (1985): 5-19.

Pratzner, F. C. "Sociotechnical Literacy: An Alternative to the Technological Perspective." In *Technological Literacy. Proceedings from an International Symposium on Technological Literacy*, edited by E. K. Blankenbaker and A. J. Miller. Columbus: College of Education, The Ohio State University, 1987. (ERIC Document Reproduction Service No. ED 291 956).

Pratzner, F. C., and Russell, J. F. *The Changing Workplace: Implications of Quality of Work Life Developments for Vocational Education*. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1984. (ERIC Document Reproduction Service No. ED 240 283).

Reich, R. B. "The Next American Frontier." *Atlantic Monthly* 251 (1983): 43-58.

Reich, R. B. *The Work of Nations: Preparing Ourselves for 21st Century Capitalism*. New York: Vintage Books, 1992.

Rosenfeld, S. A. "Determinants of Excellence in Vocational Education." In *Design Papers for the National Assessment of Vocational Education*. Washington, DC: National Assessment of Vocational Education, U.S. Department of Education, 1987. (ERIC Document Reproduction Service No. ED 283 020).

Schmidt, F., and Hunter, J. "Employment Testing: Old Theories and New Research Findings." *American Psychologist* 36 (1981): 1128-1137.

Secretary's Commission on Achieving Necessary Skills. *What Work Requires of Schools: A SCANS Report for America 2000*. Washington, DC: Secretary's Commission on Achieving Necessary Skills, U.S. Department of Labor, 1991. (ERIC Document Reproduction Service No. ED 332 054).

Secretary's Commission on Achieving Necessary Skills. *Learning a Living: A Blueprint for High Performance*. Washington, DC: Secretary's Commission on Achieving Necessary Skills, U.S. Department of Labor, April 1992. (ERIC Document Reproduction Service No. ED 346 348).

Semple, N. "Investing in Our Children: Business and the Public Schools." In *Strengthening the Basic Competencies of Students Enrolled in Vocational Education*, edited by S. A. Korcheck. Atlanta, GA: Southern Regional Education Board, 1987. (ERIC Document Reproduction Service No. ED 279 896).

Seymour, D. T. *On Q: Causing Quality in Higher Education*. New York: Macmillan, 1989.

Seymour, D. T., and Collett, C. *Total Quality Management in Higher Education: A Critical Assessment. 1991 Application Report (#91-01)*. Methuen, MA: GOAL/QPC, 1991.

Sherr, Lawrence A., and Lozier, G. Gregory. "Total Quality Management in Higher Education." *New Directions for Institutional Research* 18, no. 3 (Fall 1991): 3-11. (ERIC No. EJ 433 177).

Slavin, R. E. *Cooperative Learning*. New York: Longman, 1983.

Slavin, Robert E., and Madden, Nancy A. "Modifying Chapter 1 Program Improvement Guidelines to Reward Appropriate Practices." *Educational Evaluation and Policy Analysis* 13, no. 4 (Winter 1991): 369-379. (ERIC No. EJ 438 596).

Smith, R. C., and Hester, E. L. *The States' Excellence in Education Commissions: Who's Looking Out for At-Risk Youth*. Chapel Hill, NC: MDC, Inc., Fall 1985.

Spanbauer, Stanley J., and Hillman, Jo Ann. *Quality First in Education . . . Why Not? Using Quality and Productivity Methods to Improve Schools*. Appleton, WI: Fox Valley Technical College, 1987. (ERIC Document Reproduction Service No. ED 318 508).

Thurow, L. *Head to Head: The Coming Economic Battle among Japan, Europe, and America*. New York: Morrow, 1992.

Tribus, M. "Deming's Way." Cambridge, MA: Center for Advanced Engineering Study, Massachusetts Institute of Technology, 1991.

Trist, E. *The Evolution of Socio-Technical Systems: A Conceptual Framework and an Action Research Program*. Ontario: Ontario Quality of Working Life Centre, Ontario Ministry of Labor, 1981.

Tucker, M. S., and Mandel, D. R. "Preface." In *Technology, the Economy and Vocational Education*, edited by S. A. Rosenfeld. Washington, DC: Carnegie Forum on Education and the Economy, 1986. (ERIC Document Reproduction Service No. ED 281 017).

U.S. Department of Commerce. *1992 Award Criteria: Malcolm Baldridge National Quality Award*. Gaithersburg, MD: Technology Administration, National Institute of Standards and Technology, U.S. Department of Commerce, 1991.

U.S. Department of Education. *America 2000: An Education Strategy*. Washington, DC: U.S. Department of Education, 1991a. (ERIC Document Reproduction Service No. ED 332 380).

U.S. Department of Education. *America 2000: An Education Strategy. Sourcebook*. Washington, DC: U.S. Department of Education, 1991b. (ERIC Document Reproduction Service No. ED 327 985).

U.S. Department of Education. "State Vocational and Applied Technology Education Programs and National Discretionary Programs of Vocational Education." *Federal Register*, August 14, 1992.

Vocational-Technical Education Consortium of States. "Vital Resources for Meeting the Requirements of the New Carl D. Perkins Vocational and Applied Technology

Education Act." Decatur, GA: VTECS, Commission on Occupational Education Institutions, Southern Association of Colleges and Schools, n.d.

Walton, M. *The Deming Management Method*. New York: Perigee Books, 1986.

Wartell, M. A., and Huelskamp, R. M. "Testimony before Subcommittee on Elementary, Secondary, and Vocational Education, Committee on Education and Labor, U.S. House of Representatives." Albuquerque, NM: Systems Analysis Department, Sandia National Laboratories, 1991.

Wasserman, A. "Teaching for Thinking: Louis E. Raths Revisited." *Phi Delta Kappan* 68, no. 6 (February 1987): 460-466. (ERIC No. EJ 347 151).

Weber, J. M.; Puleo, N.; and Klingler, K. *A Multifaceted Look at the Effects of Program Options: Final Report*. Columbus: Center on Education and Training for Employment, The Ohio State University, 1990.

Weber, J. M.; Puleo, N.; Kurth, P.; Fitch, M.; and Schaffner, D. *The Dynamics of Secondary Vocational Classrooms*. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1988. (ERIC Document Reproduction Service No. ED 297 090).

William T. Grant Foundation. *The Forgotten Half: Non-College Youth in America*. Washington, DC: Commission on Work, Family, and Citizenship, William T. Grant Foundation, 1988a. (ERIC Document Reproduction Service No. ED 290 822)

William T. Grant Foundation. *The Forgotten Half: Pathways to Success for America's Youth and Young Families*. Washington, DC: Commission on Work, Family, and Citizenship, William T. Grant Foundation, 1988b. (ERIC Document Reproduction Service No. ED 300 580).

William T. Grant Foundation. *Voices from the Field: 30 Expert Opinions on 'America 2000', The Bush Administration Strategy to 'Reinvent' America's Schools*. Washington, DC: Commission on Work, Family, and Citizenship, William T. Grant Foundation; Institute for Educational Leadership, 1991. (ERIC Document Reproduction Service No. ED 336 823).

Wirth, A. G. *Productive Work in Industry and Schools: Becoming Persons Again*. Washington, DC: University Press of America, 1983.

Wirth, A. G. "Work, Vocational Studies, and the Quality of Life." In *Re-Visioning Vocational Education in the Secondary School*, by G. H. Copa and Associates. St. Paul: Minnesota Research and Development Center for Vocational Education, University of Minnesota, 1986. (ERIC Document Reproduction Service No. ED 279 846).

Work in America Institute. *Productivity through Work Innovations*. Elmsford, NY: Pergamon Press, 1982.

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